Author Index to Volumes 113, 114, 115, and 116

References with (E) are to Errata

Achor, W. T., W. E. Phillips, J. I. Hopkins, and S. K. Haynes. Low-intensity conversion lines from Sm^{151} and Sn^{113}—**114**, 137

Adair, Robert K. High-energy maxima in π-p cross sections—**113**, 338

—— (see Haas, R.)—**116**, 1221

Adams, I. (see Wolff, G. A.)—**114**, 1262

Adawi, I. Variational approach to deviations from Ohm's law—**115**, 1152

Adler, R. (see Chidley, B.)—**116**, 1015

Aharonov, Y. and D. Bohm. Significance of electromagnetic potentials in quantum theory—**115**, 485

Aisenberg, Sol, H. Statz, and G. F. Koster. Test of spin Hamiltonian for Fe^{3+} in $SrTiO_3$—**116**, 811

Aizu, H., Y. Fujimoto, S. Hasegawa, M. Koshiba, I. Mito, J. Nishimura, K. Yokoi, and Marcel Schein. Heavy nuclei in primary cosmic radiation at Prince Albert, Canada. I. C, N, and O—**116**, 436

Ajzenberg-Selove, F., C. F. Osgood, and C. P. Baker. Neutrons from proton bombardment of Li^6 and Li^7—**116**, 1521

Albers, James R. (see Fano, U.)—**116**, 1147; **116**, 1159

Albert, Richard D. (p,n) cross section and proton optical model parameters in 4- to 5.5-Mev energy region—**115**, 925

Albright, C. H. Hyperon β decay—**115**, 750

—— Parity of K meson and Λ β-decay branching ratio—**114**, 1648

Alburger, D. E., A. Gallmann, and D. H. Wilkinson. Decay schemes of C^{15}, N^{16}, and O^{19}—**116**, 939

—— (see Wilkinson, D. H.)—**113**, 563

Alers, P. B. Faraday effect in Ce phosphate glasses at low temperatures—**116**, 1483

Alford, W. Parker (see Hashimoto, Y.)—**116**, 981

—— (see Preskitt, C. A.)—**115**, 389

—— (see Slaus, I.)—**114**, 1054

—— (see Warner, Robert E.)—**114**, 1338

Allard, J. G. (see Etzel, H. W.)—**116**, 885

Allas, R. G. and F. B. Shull. Polarization of protons in $C^{12}(d,p)C^{13}$—**116**, 996

Allen, J. S., R. L. Burman, W. B. Herrmannsfeldt, P. Stähelin, and T. H. Braid. Determination of β-decay interaction from electron-neutrino angular correlation measurements—**116**, 134

Allen, Robert C. (see Jarmie, Nelson)—**114**, 176

Alley, P. and B. Serin. Deviations from Matthiessen's rule in Al, Sn, and Cu alloys—**116**, 334

Allgaier, Robert S. Magnetoresistance in multivalley model with (110)-ellipsoids of general shape—**115**, 1185

Almqvist, E., D. A. Bromley, A. J. Ferguson, H. E. Gove, and A. E. Litherland. Study of some levels of C^{12} using the $B^{10}(He^3,p)C^{12*}$ reactions—**114**, 1040

—— (see Bromley, D. A.)—**114**, 758; **115**, 586

—— (see Kuehner, J. A.)—**114**, 775

Amado, R. D. and K. A. Brueckner. Moment of inertia of interacting many-body fermion systems—**115**, 778

Amar, Henri. Magnetization mechanism and domain structure of multidomain particles—**113**, 1697(E)

Amati, D. Indication for K, Λ, Σ relative parities from effective range analysis of K^+-p scattering—**113**, 1692

Ambegaokar, V. Thermal resistance due to isotopes at high temperatures—**114**, 488

Amiel, Saadia. Reactions of α particles with Ge^{70} and Zn^{70}—**116**, 415

Amith, A. New parallel photoelectromagnetic effect—**116**, 330

—— Photoconductive and photoelectromagnetic lifetime determination in presence of trapping. I. Small signals—**116**, 793

Amster, Harvey J. Optical model evidence for surface absorption of neutrons—**113**, 911

Andelin, John P., Jr. (see White, Robert L.)—**115**, 1435

Anderson, A. G. Nonresonant nuclear spin absorption in Li, Na, and Al—**115**, 863

—— **and A. G. Redfield.** Nuclear spin-lattice relaxation in metals—**116**, 583

Anderson, C. E. (see Quinton, A. R.)—**115**, 886

Anderson, Elmer E., J. Richard Cunningham, Jr., and G. E. McDuffie. Magnetic properties of mixed garnets $(3-x)Y_2O_3 \cdot xGd_2O_3 \cdot 5Fe_2O_3$—**116**, 624

Anderson, Hugh R. Sudden increase of cosmic-ray intensity—**116**, 461

Anderson, James L. Factor sequences in quantized general relativity—**114**, 1182

Anderson, John D., Calvin C. Gardner, John W. McClure, M. P. Nakada, and Calvin Wong. Back-angle elastic scattering of 14.6-Mev neutrons from Al, Cu, and Zr—**115**, 1010

—— (see Wong, C.)—**116**, 164

Anderson, L. Wilmer, Francis M. Pipkin, and James C. Baird, Jr. N^{14}-N^{15} hyperfine anomaly—**116**, 87

Anderson, P. W. New approach to theory of superexchange interactions—**115**, 2

—— Spectral diffusion, phonons, and paramagnetic spin-lattice relaxation—**114**, 1002

—— **and H. Suhl.** Spin alignment in superconducting state—**116**, 898

Anderson, Paul A. Work function of Au—**115**, 553

—— **and A. L. Hunt.** Effect of O_2 on work function of Ba—**115**, 550

Apker, L. (see Taft, E.)—**113**, 156

Araki, Gentaro, Koichi Mano, and Masao Ohta. Isotope shift of He $2P$—**115**, 1222

——, **Masao Ohta, and Koichi Mano.** Triplet intervals of He—**116**, 651

Arbell, H. (see Halperin, A.)—**113**, 1216

Ard, W. B., Jr. (see Hasty, T. E.)—**116**, 1459

Argo, H. V., F. B. Harrison, H. W. Kruse, and A. D. McGuire. Absorption of μ^- mesons in C^{12}—**114**, 626

Armstrong, R. A. (see Crowell, C. R.)—**114**, 1500

Arnold, G. P. (see Yarnell, J. L.)—**113**, 1379

Arnold, George W. and W. Dale Compton. Radiation effects in silica at low temperatures—**116**, 802

Arnold, R. C. (see Kruse, U. E.)—**116**, 1008

Arnowitt, R. and S. Deser. Quantum theory of gravitation: general formulation and linearized theory—**113**, 745

——, **S. Deser, and C. W. Misner.** Dynamical structure and definition of energy in general relativity—**116**, 1322

—— (see Girardeau, M.)—**113**, 755

Arrott, Anthony and Hiroshi Sato. Transitions from ferromagnetism to antiferromagnetism in Fe-Al alloys: experimental results—**114**, 1420

—— (see Sato, Hiroshi)—**114**, 1427

Artman, J. O. (see Bloembergen, N.)—**114**, 445

Asaro, Frank (see Stephens, F. S.)—**113**, 212

Asplund, I. and T. Wiedling. Zero-spin excited state in Ca^{42}—**116**, 741

Atkins, K. R. Ions in liquid He—**116**, 1339

—— Third and fourth sound in liquid He II—**113**, 962

—— **and H. Flicker.** Velocity of sound in liquid He^3—**113**, 959

—— **and H. Flicker.** Velocity of sound in liquid He^3 at high pressures—**116**, 1063

——, **B. Rosenbaum, and H. Seki.** Evaporation effects during superflow of liquid He II—**113**, 751

Atkinson, W. R. (see Fowler, R. G.)—**113**, 1268

Attard, A. E. (see Zitter, R. N.)—**115**, 266
Aukerman, L. W. Electron irradiation of InAs—**115**, 1133
—— Electron irradiation of InSb—**115**, 1125
Axelrod, Norman N. and M. Parker Givens. Absorption by gaseous He in extreme uv—**115**, 97

Bailey, C. A. and P. L. Smith. Specific heats of ammonium, potassium, and sodium chloroiridates—**114**, 1010
Bailey, L. Evan (see Rubin, Sylvan)—**114**, 1110
Baird, James C., Jr. (see Anderson, L. Wilmer)—**116**, 87
Baker, C. P. (see Ajzenberg-Selove, F.)—**116**, 1521
Baker, S. D. (see McIntyre, J. A.)—**116**, 1212
Balazs, Nandor L. Statistical mechanics of strings—**113**, 1178
Baldo-Ceolin, M. (see Camerini, U.)—**115**, 1048
Ball, J. B., A. W. Fairhall, and I. Halpern. Radiative α-particle capture in Ni^{58} and Xe^{136} at higher energies—**114**, 305
Ball, James S. and Jose R. Fulco. Nucleon-antinucleon scattering—**113**, 647
Balluffi, R. W. (see Vook, Frederick L.)—**113**, 62; **113**, 72
Bame, S. J., Jr., and R. L. Cubitt. $Li^6(n,t)He^4$ reaction at intermediate energies—**114**, 1580
——, **and R. L. Cubitt.** (n,γ) cross sections of Na^{23}, I^{127}, and Au^{197}—**113**, 256
Baranger, Michel and Bernard Mozer. Electric field distributions in ionized gas—**115**, 521
Barber, W. C. and W. D. George. Neutron yields from targets bombarded by electrons—**116**, 1551
Barcus, L. C., A. Perlmutter, and J. Callaway. Effective mass of electrons in GaAs—**115**, 1778(E)
Bardeen, J., G. Rickayzen, and L. Tewordt. Theory of thermal conductivity of superconductors—**113**, 982
Barnes, R. F. (see Coté, R. E.)—**114**, 505
Baroody, E. M. Theory of displacement cascades in compounds—**116**, 1418
Barrett, Paul H. Nuclear absorption cross sections for 3.6-Bev neutrons—**114**, 1374
Barrett, W. A., F. E. Holmstrom, and J. W. Keuffel. Capture and decay of μ^- in Fe—**113**, 661
Barron, T. H. K. and J. A. Morrison. Properties of alkali halide crystals at low temperatures—**115**, 1439
Barschall, H. H. (see Johnsrud, A. E.)—**116**, 927
Barshay, Saul. Hyperon-antihyperon production in nucleon-antinucleon collisions and relative Σ-Λ parity—**113**, 349
—— **and R. E. Behrends.** Inner bremsstrahlung in hyperon decays—**114**, 931
Bartholomew, G. A. (see Knowles, J. W.)—**114**, 1065
—— (see Manning, G.)—**115**, 401
Bashkin, S., R. R. Carlson, and R. A. Douglas. Cross section for elastic scattering of protons by N^{14}—**114**, 1552
——, **R. R. Carlson, and R. A. Douglas.** Cross sections for elastic scattering and reactions due to protons on N^{15}—**114**, 1543
Batterman, Boris W. X-ray measurement of atomic scattering factor of Fe—**115**, 81
Baumel, P. (see Taylor, S.)—**114**, 359
Bayman, B. F., A. S. Reiner, and R. K. Sheline. Levels in Zr^{90}: theoretical—**115**, 1627
Becker, Robert A. and William A. Fowler. Abundances of rare-earth nuclei produced by rapid neutron capture in supernovae—**115**, 1410
—— (see Dillman, L. T.)—**113**, 635
—— (see Henry, R. W.)—**113**, 1090
Beckman, Olof and Pär Bergvall. Precision measurement of K x-ray spectrum of Hg—**114**, 1280
Bedo, D. E. and D. H. Tomboulian. $M_{2,3}$ emission band of Cu—**113**, 464
Bég, M. A. B. and P. M. Stehle. Formation of positronium in electron gas—**113**, 1545
Behrends, R. E. (see Barshay, S.)—**114**, 931
—— (see Feinberg, G.)—**115**, 745
Behrendt, D. R. (see Liu, S. H.)—**116**, 1464
Behringer, Robert E. Metallic transition in LiH—**113**, 787
Bekefi, G., Jay L. Hirshfield, and Sanborn C. Brown. Incoherent microwave radiation from plasmas—**116**, 1051
Bell, R. (see Fletcher, P.)—**114**, 739
Benczer-Koller, N., A. Schwarzschild, and C. S. Wu. Decay of K^{43}—**115**, 108
Bendt, P. J., R. D. Cowan, and J. L. Yarnell. Excitations in liquid He: thermodynamic calculations—**113**, 1386
—— (see Yarnell, J. L.)—**113**, 1379
Benedek, G. B. Deduction of volume dependence of cohesive energy of solids from shock-wave compression measurements—**114**, 467
Bennett, A. I. Two electrical phenomena on liquid Ge surfaces—**113**, 773
—— **and R. L. Longini.** Dendritic growth of Ge crystals—**116**, 53
Bennett, E. F. and D. R. Maxson. Angular distributions of deuterons from $Li^7(p,d)Li^6$ reactions—**116**, 131
Ben Sira, M. Y., B. Pratt, E. Harnik, and A. Many. Polarization processes in partially illuminated photoconducting insulators—**115**, 554
Benson, Jay L., Richard A. Damerow, and Richard R. Ries. Atomic masses of stable isotopes of Pb and Hg and mass difference D_2-He^4—**113**, 1105
Ben-Zvi, A. (see Halperin, A.)—**116**, 1081
Berger, Jay M. Spin-orbit contributions to H^3-He^3 magnetic moments—**115**, 384
Berger, Martin J., John H. Hubbell, and Ida H. Reingold. Contribution of annihilation radiation to γ-ray flux in Pb—**113**, 857
—— **and Lewis V. Spencer.** General relation between fluxes from collimated point and plane sources of radiation—**113**, 408
Bergmann, Peter G. (see Boardman, John)—**115**, 1318
Bergvall, Pär (see Beckman, Olof)—**114**, 1280
Berlincourt, Ted G. Hall effect, resistivity, and magnetoresistivity of Th, U, Zr, Ti, and Nb—**114**, 969
Berners, E. D. (see Knecht, David J.)—**114**, 550
Bernstein, Jeremy. Radiative muon capture—**115**, 694
Bersohn, R. (see Das, T. P.)—**115**, 897
Bertotti, Bruno. Structure of electromagnetic field—**115**, 742
—— Uniform electromagnetic field in theory of general relativity—**116**, 1331
Bethe, H. A. (see Suh, K. S.)—**115**, 672
Beverly, W. B. (see Bucher, W. P.)—**115**, 961
Bialkowski, Grzegorz and Andrezej Jurewicz. K^+ nucleon scattering in Tamm-Dancoff approximation—**116**, 1269
Bichard, J. W., J. W. Mihelich, and B. Harmatz. Electron capture decay of Lu^{173} to levels in Yb^{173}—**116**, 720
Bichsel, H. (see Gerhart, J. B.)—**114**, 1095
Bickel, P. W. (see Eisen, F. H.)—**115**, 345
Bierman, E., R. Lea, J. Orear, and S. Rosendorff. Evidence against mass-500 particle—**113**, 710
Bilhorn, D. E. (see Tobocman, W.)—**115**, 1275
Bincer, Adam M. Nuclear spin-electron-neutrino correlation in forbidden β decay—**113**, 1697(E)
Biondi, Manfred A. and M. P. Garfunkel. mm wave absorption in superconducting Al. I. Temperature dependence of energy gap—**116**, 853
—— **and M. P. Garfunkel.** mm wave absorption in superconducting Al. II. Calculation of skin depth—**116**, 862
—— **and J. A. Rayne.** Band structure of noble metal alloys: optical absorption in α-brasses at 4.2°K—**115**, 1522
Birk, M., G. Goldring, and Y. Wolfson. Lifetimes of 2^+ rotational states—**116**, 730
Birman, Joseph L. Selection rules for dipole transitions in wurtzite structure—**114**, 1490

—— Simplified LCAO method for zincblende, wurtzite, and mixed crystal structures—**115**, 1493
Bjorken, J. D. and S. D. Drell. Tridents, μ pairs, and quantum electrodynamics at small distances—**113**, 1368
Bjorkstam, John L. and Edwin A. Uehling. Deuteron magnetic resonance spectrum and relaxation in KD_2PO_4—**114**, 961
Bjørnholm, S., O. B. Nielsen, and R. K. Sheline. Levels in Zr^{90}: experimental—**115**, 1613
—— (see Toth, K. S.)—**116**, 118
Blair, J. M. (see Norbeck, E.)—**116**, 1560
Blair, John S. Inelastic diffraction scattering—**115**, 928
Blankenbecler, R. and S. Gartenhaus. Evaluation of dispersion relations—**116**, 1297
—— (see S. Gartenhaus)—**116**, 1305
Blanpied, William A. Polarization of scattered protons near 17 Mev—**113**, 1099
—— p-p polarization at 16 Mev—**116**, 738
Blatt, F. J. (see Burstein, E.)—**113**, 15
—— (see Kropschot, R. H.)—**116**, 617
Bleuler, E. (see Corelli, J. C.)—**116**, 1184
Bloch, Michel and Matthew Sands. Photoproduction of pion pairs in H—**113**, 305
Bloembergen, N., S. Shapiro, P. S. Pershan, and J. O. Artman. Cross relaxation in spin systems—**114**, 445
—— (see Shapiro, S.)—**116**, 1453
—— (see Taylor, E. F.)—**113**, 431
Blount, Eugene I. Energy levels in irradiated Ge—**113**, 995
—— Exclusion factors in transport theory—**116**, 1365
—— Ultrasonic attenuation by electrons in metals—**114**, 418
Bludman, S. A. Phenomenological analysis of hyperon decay—**115**, 468
Blumberg, L. and R. B. Leachman. Angular distribution of fragments from neutron-induced fission of U^{233} and Pu^{239}—**116**, 102
Boardman, John and Peter G. Bergmann. Spherical gravitational waves—**115**, 1318
Bocchieri, P. and A. Loinger. Ergodic foundation of quantum statistical mechanics—**114**, 948
Bodansky, D. (see Eccles, S. F.)—**113**, 608
Bohm, D. (see Aharonov, Y.)—**115**, 485
Bolef, D. I. and M. Menes. Nuclear magnetic resonance absorption in KI and KBr—**114**, 1441
Bollinger, L. M. (see Coté, R. E.)—**114**, 505
Bolsterli, M. Finite-range δ-function potential—**114**, 1605
Bond, W. L. (see Kaiser, W.)—**115**, 857
Bondelid, R. O. and C. A. Kennedy. Precise determination of nuclear reaction energies and measurements of resonance widths—**115**, 1601
Bonfiglioli, G., P. Brovetto, and C. Cortese. Thermoluminescence and F centers. I. Theory—**114**, 951
——, **P. Brovetto, and C. Cortese.** Thermoluminescence and F centers. II. Experimental—**114**, 956
—— **and R. Malvano.** Surface states in metals—**115**, 330
Bonner, T. W., F. W. Prosser, Jr., and J. Slattery. Scattering of high-energy neutrons by He^4—**115**, 398
—— **and J. C. Slattery.** Nonelastic scattering cross section for 8–20 Mev neutrons—**113**, 1088
—— (see Gabbard, Fletcher)—**114**, 201
Boom, R. W. and J. Reginald Richardson. Elastic scattering of 20.35-Mev protons by Zn^{64}, Zn^{65}, and Zn^{68}—**115**, 1700
Boorse, H. A. (see Kaplan, R.)—**116**, 270
Borowitz, Sidney (see Walsh, Peter)—**115**, 1206
Bortner, T. E. (see Hurst, G. S.)—**114**, 116
Bosco, B. and V. De Alfaro. Three-pion contribution to electromagnetic structure of nucleon—**115**, 215
Bose, S. K., A. Gamba, and E. C. G. Sudarshan. Representations of Dirac equation—**113**, 1661
Bouchard, George H., Jr., and A. W. Fairhall. Production of Be^7 in 30–42 Mev He-ion bombardment of O, Al, and Cu—**116**, 160
Bowers, K. D. and W. B. Mims. Paramagnetic relaxation in Ni fluosilicate—**115**, 285
Bowers, R. and Y. Yafet. Magnetic susceptibility of InSb—**115**, 1165
Bowers, W. A. (see Singh, D. N.)—**116**, 279
Boyd, D. R. (see Sihvonen, Y. T.)—**113**, 965
Boyer, Keith (see Northrop, John A.)—**115**, 1277
Bozorth, R. M., B. T. Matthias, H. Suhl, E. Corenzwit, and D. D. Davis. Magnetization of compounds of rare earths with Pt metals—**115**, 1595
Brackmann, R. T. (see Fite, Wade L.)—**113**, 815; **116**, 356; **116**, 363
Bradner, Hugh and William M. Isbell. Search for Dirac monopoles—**114**, 603
Braid, T. H. (see Allen, J. S.)—**116**, 134
Brailsford, A. D. (see Galt, J. K.)—**114**, 1396
Branscomb, L. M. (see Burch, D. S.)—**114**, 1652(E)
Breene, R. G., Jr. Analytic wave functions. II. Atoms with $1s$, $2s$, $2p$, $3s$, and $3p$ electrons—**113**, 809
——, **and Maria C. Nardone.** Wave function for free electron. I. Coulomb potential—**115**, 93
Breit, G. and M. L. Rustgi. Electric polarizability of neutron—**114**, 830
—— (see Shapiro, J.)—**113**, 179; **115**, 1779(E)
—— (see Zernik, W.)—**114**, 1358
Bremer, J. W. and V. L. Newhouse. Current transitions in superconductive Sn films—**116**, 309
Brewer, D. F. and J. G. Daunt. Expansion coefficient and entropy of liquid He^3 under pressure below 1°K—**115**, 843
——, **J. G. Daunt, and A. K. Sreedhar.** Low-temperature specific heat of liquid He^3 near saturated vapor pressure and at higher pressures—**115**, 836
Brewer, Richard G. Spontaneous nuclear reaction in molecular H_2—**115**, 1290
Brock, G. E. (see Cole, H.)—**116**, 868
Brockhouse, B. N. and P. K. Iyengar. Normal modes of Ge by neutron spectrometry—**113**, 1696(E)
Bromley, D. A., H. E. Gove, J. A. Kuehner, A. E. Litherland, and E. Almqvist. Unnatural parity states in O^{16}. I—**114**, 758
——, **J. A. Kuehner, and E. Almqvist.** He^3- and He^4-induced Coulomb excitation—**115**, 586
—— (see Almqvist, E.)—**114**, 1040
—— (see Kuehner, J. A.)—**114**, 775
Broom, R. F. and E. H. Rhoderick. Time delays in superconducting transition of Pb films—**116**, 344
Brophy, James J. Crystalline imperfections and $1/f$ noise—**115**, 1122
Brosi, A. R., B. H. Ketelle, H. C. Thomas, and R. J. Kerr. Decay schemes of Sm^{145} and Pm^{145}—**113**, 239
—— (see Ketelle, B. H.)—**116**, 98
Brout, R. Statistical mechanical theory of random ferromagnetic system—**115**, 824
—— Sum rule for lattice vibrations in ionic crystals—**113**, 43
Brovetto, P. (see Bonfiglioli, G.)—**114**, 951; **114**, 956
Brower, W. S. (see Fang, P. H.)—**113**, 456
Brown, Frederick C. (see Kobayashi, Koichi)—**113**, 507
Brown, H. A. and J. M. Luttinger. Ferromagnetic and antiferromagnetic Curie temperatures—**115**, 1778(E)
Brown, Sanborn C. (see Bekefi, G.)—**116**, 1051
Browne, Cornelius P. $Si^{28}(d,\alpha)Al^{26}$ reaction—**114**, 807
Browne, M. E. (see Dobrov, W. I.)—**115**, 79
Brueckner, K. A. and D. T. Goldman. Modified Hartree-Fock method for finite nucleus—**116**, 424
—— (see Amado, R. D.)—**115**, 778
Brun, E. (see Horen, D. J.)—**113**, 875
Brussel, Morton K. and John H. Williams. Elastic scattering of 40-Mev protons from isotopes of Fe, Ni, and Cu—**114**, 525
Bube, Richard H. and Arthur B. Dreeben. Dependence of hole ionization energy of imperfections in CdS on impurity concentration—**115**, 1578

—— **and Edward L. Lind.** Photoconductivity of GaSe crystals—**115**, 1159
Buchdahl, H. A. General relativistic fluid spheres—**116**, 1027
—— Reciprocal static metrics and scalar fields in general theory of relativity—**115**, 1325
Bucher, W. P., W. B. Beverly, G. C. Cobb, and F. L. Hereford. Scattering of 2- to 4-Mev polarized neutrons by C—**115**, 961
Bundy, F. P. Phase diagram of Rb to 150 000 kg/cm² and 400°C—**115**, 274
—— (see Strong, H. M.)—**115**, 278
Buneman, O. Dissipation of currents in ionized media—**115**, 503
Bunker, M. E., B. J. Dropesky, J. D. Knight, J. W. Starner, and B. Warren. Decay of U^{240} and 7.3-min Np^{240}—**116**, 143
Burch, David S., Stephen J. Smith, and L. M. Branscomb. Photodetachment of O_2^-—**114**, 1652(E)
—— (see Smith, Stephen J.)—**116**, 1125
Burgus, W. H. (see Regier, R. B.)—**113**, 1589
Burkig, Jack W. Proton α-particle scattering at 20.1 Mev—**116**, 674
——, **J. Reginald Richardson, and Glen E. Schrank.** p-p scattering at 19.8 Mev—**113**, 290
Burman, R. L. (see Allen, J. S.)—**116**, 134
Burns, Gerald. Antishielding and polarizabilities in alkali halide gases—**115**, 357
Burson, S. B., H. A. Grench, and L. C. Schmid. Decay of $_{50}Sn^{113}$ (112 days) and $_{49}In^{113m}$ (1.73 hr)—**115**, 188
—— (see Schmid, L. C.)—**115**, 174; **115**, 178; **115**, 447
Burstein, E., G. S. Picus, R. F. Wallis, and F. Blatt. Zeeman-type magneto-optic studies of interband transitions in semiconductors—**113**, 15
Butler, J. W., L. W. Fagg, and H. D. Holmgren. Energy levels in F^{19} from $O^{18}(d,n\gamma)F^{19}$ reaction—**113**, 268
—— **and H. D. Holmgren.** Radiative proton capture by O^{18}—**116**, 1485
—— (see Gossett, C. R.)—**113**, 246
Button, Kenneth J. (see Zwerdling, Solomon)—**114**, 80

Cabibbo, N. and R. Gatto. Structure of weak interactions and unwanted processes—**116**, 1334
Cable, J. W. (see Wilkinson, M. K.)—**113**, 497
Caldwell, Robert S. and H. Y. Fan. Optical properties of Te and Se—**114**, 664
Callaway, Joseph. Correlation energy in model semiconductor—**116**, 1368
—— d bands in bcc lattice—**115**, 346
—— Formation of positronium in electron gas—**116**, 1140
—— Model for lattice thermal conductivity at low temperatures—**113**, 1046
—— (see Barcus, L. C.)—**115**, 1778(E)
Camerini, U., W. F. Fry, M. Baldo-Ceolin, H. Huzita, and S. Natali. Nuclear interaction of θ_2 mesons in emulsion—**115**, 1048
Campion, P. J. (see Knowles, J. W.)—**114**, 1065
Capps, Richard H. Behavior of intense relativistic electron beams—**114**, 1203
—— Parities of K-hyperon pairs—**115**, 736
—— Photoproduction of K mesons and K-hyperon parities—**114**, 920
Caretto, Albert A., Jr., and Edwin O. Wiig. Interaction of Y with protons of energy between 60 and 240 Mev—**115**, 1238
Carlson, R. R. (see Bashkin, S.)—**114**, 1543; **114**, 1552
Carpenter, Stuart G. and Richard Wilson. p-n asymmetries at 143 Mev—**113**, 650
—— **and Richard Wilson.** Search for resonance structure of neutron cross sections at 100 Mev—**114**, 510
Carruthers, Peter. Scattering of phonons by elastic strain fields and thermal resistance of dislocations—**114**, 995
Carter, R. E., F. Reines, J. J. Wagner, and M. E. Wyman. Free antineutrino absorption cross section. II. Expected cross section from measurements of fission fragment electron spectrum—**113**, 280
Casella, R. C. Symmetry of wurtzite—**114**, 1514
—— **and S. P. Keller.** Polarized light transmission of $BaTiO_3$ single crystals—**116**, 1469
Castner, T. G., Jr. Saturation of paramagnetic resonance of V center—**115**, 1506
Cetlin, B. B. (see Galt, J. K.)—**114**, 1396
Chamberlain, Owen, Gerson Goldhaber, Louis Jauneau, Theodore Kalogeropoulos, Emilio Segrè, and Rein Silberberg. Antiproton-nucleon annihilation process. II—**113**, 1615
Champion, K. S. W. (see Faire, A. C.)—**113**, 1
Chanin, G., E. A. Lynton, and B. Serin. Impurity effects on superconductive critical temperature of In and Al—**114**, 719
Charap, S. H. and P. R. Weiss. Pseudodipolar anisotropy in cubic ferromagnets at low temperatures—**116**, 1372
Chase, L. F., Jr., and G. Igo. Evidence for polarization of B^{12} nuclei produced in (d,p) reaction—**116**, 170
Chasman, R. R. and J. O. Rasmussen. Theoretical studies of α decay of U^{233}—**115**, 1257
Chen, H. Y. (see Young, O. B.)—**115**, 1719
Cheroff, G., R. C. Enck, and S. P. Keller. Effects of polarized light on photocurrents and photovoltages in ZnS—**116**, 1091
Cherry, R. D. Mirror nuclei radii utilizing self-energy term and nonuniform charge distributions—**115**, 1243
Chew, G. F. and F. E. Low. Unstable particles as targets in scattering experiments—**113**, 1640
Chidley, B., P. Goldstein, G. Hinman, R. Summers, and R. Adler. Scattering of μ mesons from Pb nuclei—**116**, 1015
Choudhury, D. C. (see Tamura, T.)—**113**, 552
Chrenko, R. M. (see Newman, R.)—**114**, 1507; **115**, 882; **115**, 1147
Chrien, R. E. (see Mann, D. P.)—**116**, 1516
Christman, D. (see Friedman, L.)—**115**, 166
Chupp, Edward L. (see Hess, Wilmot N.)—**116**, 445
Chynoweth, A. G. Radiation damage effects in ferroelectric triglycine sulfate—**113**, 159
Cini, M., S. Fubini, and A. Stanghellini. Fixed angle dispersion relations for nucleon-nucleon scattering—**114**, 1633; **115**, 1779(E)
Clark, John W. and Eugene Feenberg. Simplified treatment for strong short-range repulsions in N-particle systems. I. General theory—**113**, 388
Cobb, G. C. (see Bucher, W. P.)—**115**, 961
Cobble, J. W. (see Gunnink, R.)—**115**, 1247
Cocconi, G. (see Hart, E. L.)—**115**, 678
—— (see Sellen, J. M.)—**113**, 1323
Cocconi, V. T. (see Hart, E. L.)—**115**, 678
—— (see Sellen, J. M.)—**113**, 1323
Cochran, Robert G. and W. W. Pratt. 25-min isomer of Se^{83}—**113**, 852
—— (see Pratt, William W.)—**116**, 1578
Coelho, Roland (see Pratt, G. W., Jr.)—**116**, 281
Cohen, Bernard L. Reaction mechanism in direct interaction inelastic scattering—**116**, 426
—— **and Allen G. Rubin.** Determination of nuclear reaction mechanisms from energy spectra of emitted particles—**114**, 1143
—— **and Allen G. Rubin.** Inelastic proton scattering in medium-weight elements—**113**, 579
Cohen, L., R. A. Tobin, and J. McElhinney. Resonance scattering of γ rays by 4.46-Mev and 5.03-Mev states of B^{11}—**114**, 590
Cohen, M. H. (see Ehrenreich, H.)—**115**, 786

Cohn, H. O. and J. L. Fowler. Differential elastic scattering of neutrons from Ne—**114**, 194
Coish, H. R. Elementary particles in finite world geometry—**114**, 383
Coldwell-Horsfall, Rosemary A. and D. ter Haar. Influence of collective effects on magnetoresistance of metals—**115**, 891
Cole, H. and G. E. Brock. Self-adjustment of internal radiation field to compensate for linearly varying d spacing in x-ray diffraction—**116**, 868
Coleman, Bernard D. and Walter Noll. Conditions for equilibrium at negative absolute temperatures—**115**, 262
Colvin, Clifford B. (see Schupp, Fritz, D.)—**113**, 1095
Compton, Vera B. (see Matthias, Bernd)—**115**, 1597
Compton, W. Dale (see Arnold, George W.)—**116**, 802
Connell, R. A. (see Seraphim, D. P.)—**116**, 606
Conversi, M., G. M. de Munari, A. Egidi, E. Fiorini, S. Ratti, C. Rubbia, C. Succi, and G. Torelli. Mass-550 particle—**114**, 1150
Conway, D. C. and W. H. Johnston. Determination of low-energy region of tritium β spectrum—**116**, 1544
Cool, R. L., Bruce Cork, James W. Cronin, and William A. Wenzel. Asymmetry in decay of Σ hyperons—**114**, 912
Cooper, L. N., R. L. Mills, and A. M. Sessler. Possible superfluidity of system of strongly interacting fermions—**114**, 1377
Corbett, J. W., R. B. Smith, and R. M. Walker. Recovery of electron-irradiated Cu. I. Close pair recovery—**114**, 1452
——, **R. B. Smith, and R. M. Walker.** Recovery of electron-irradiated Cu. II. Interstitial migration—**114**, 1460
—— **and R. M. Walker.** Energy dependence of recovery in irradiated Cu—**115**, 67
Corelli, J. C., E. Bleuler, and D. J. Tendam. Scattering of 18-Mev α particles by C^{12}, O^{16}, and S^{32}—**116**, 1184
Corenzwit, Ernest (see Bozorth, R. M.)—**115**, 1595
—— (see Matthias, Bernd)—**115**, 1597
Cork, Bruce (see Cool, R. L.)—**114**, 912
Cork, J. M. (see Schmid, L. C.)—**115**, 174
Corliss, L. M. (see Hastings, J. M.)—**115**, 13
Cormack, A. M. Semiclassical theory of internal Rayleigh scattering—**115**, 619
——, **J. N. Palmieri, N. F. Ramsey, and Richard Wilson.** Elastic scattering and polarization of protons by He at 147 and 66 Mev—**115**, 599
Cortellessa, G. (see McDaniel, B. D.)—**115**, 1039
Cortese, C. (see Bonfiglioli, G.)—**114**, 951; **114**, 956
Coté, R. E., L. M. Bollinger, R. F. Barnes, and H. Diamond. Slow-neutron cross sections of Pu^{240}, Pu^{242}, and Am^{243}—**114**, 505
Cowan, Clyde L., Jr. (see Reines, Frederick)—**113**, 273
Cowan, R. D. (see Bendt, P. J.)—**113**, 1386
Cox, S. A. (see Smith, A. B.)—**115**, 1242
Cranberg, L. Polarization of neutrons from $Li^7(p,n)Be^7$ and from n-d scattering—**114**, 174
—— **and R. K. Smith.** Breakup of deuterons by protons—**113**, 587
—— (see Marion, J. B.)—**114**, 1584
Crasemann, Bernd (see Rehfuss, D. E.)—**114**, 1609
Crawford, Frank S., Jr., Marcello Cresti, Myron L. Good, Klaus Gottstein, Ernest M. Lyman, Frank T. Solmitz, M. Lynn Stevenson, and Harold Ticho. Evidence for transition of K^0 into $\bar{K}^0$ meson—**113**, 1601
Creager, Charles B. (see Mitchell, Allan C. G.)—**113**, 628
Creek, G. E. (see Smith, E. C.)—**115**, 1693
Cresti, Marcello (see Crawford, Frank S., Jr.)—**113**, 1601
Crewe, A. V., B. Ledley, E. Lillethun, S. Marcowitz, and L. G. Pondrom. Elastic proton-deuteron scattering at 450 Mev—**114**, 1361
Cromer, Alan H. Direct-interaction model calculations of high-energy proton-carbon scattering—**113**, 1607
Cronemeyer, D. C. Infrared absorption of reduced rutile TiO_2 single crystals—**113**, 1222
Cronin, James W. (see Cool, R. L.)—**114**, 912
Crouch, Marshall F. (see Stooksberry, Robert W.)—**114**, 1561
Crowe, Kenneth M. (see Kruger, Hans)—**113**, 341
Crowell, C. R. and R. A. Armstrong. Temperature dependence of work function of Ag, Na, and K—**114**, 1500
Cubitt, R. L. (see Bame, S. J., Jr.)—**113**, 256; **114**, 1580
Cumming, James B. Decay of Zn^{61}—**114**, 1600
Cunningham, J. Richard, Jr. (see Anderson, Elmer E.)—**116**, 624
Curran, R., T. M. Donahue, and W. H. Kasner. Charge transfer for protons in H_2—**114**, 490
Currie, Lloyd A. T production by 6-Bev protons—**114**, 878
Cutkosky, R. E. Interaction of static nucleons—**116**, 1272
—— Radiative meson-nucleon scattering. II—**113**, 727
Cziffra, Peter, Malcolm H. MacGregor, Michael J. Moravcsik, and Henry P. Stapp. Modified analysis of nucleon-nucleon scattering. I. Theory and p-p scattering at 310 Mev—**114**, 880
—— **and Michael J. Moravcsik.** Determination of pion-nucleon coupling constant from n-p scattering angular distribution—**116**, 226

Daehnick, Wilfried W. Neutron polarization in reaction $D(d,n)He^3$ at $E_d = 8.2$ Mev—**115**, 1008
Dalitz, R. H. and L. Liu. Pionic decay of light Λ hypernuclei—**116**, 1312
—— (see Downs, B. W.)—**114**, 593
Damask, A. C., G. J. Dienes, and V. G. Weizer. Calculation of migration and binding energies of mono-, di-, and trivacancies in Cu with use of Morse function—**113**, 781
Damerow, Richard A. (see Benson, Jay L.)—**113**, 1105
D'Angelo, N. Cloud-chamber measurement of half-life of neutron—**114**, 285
Daniel, Thomas Bruce and Robert Stump. Positron annihilation in He—**115**, 1599
Danielson, G. C. (see Sawada, S.)—**113**, 803; **113**, 1005; **113**, 1008
Danielson, Robert E. Geomagnetic measurements on heavy primary cosmic radiation near equator—**113**, 1311
Das, T. P. and R. Bersohn. Electric and magnetic properties of the H_2 molecule—**115**, 897
——, **D. K. Roy, and S. K. Ghosh Roy.** Quadrupolar nuclear spin-lattice relaxation in crystals with bcc lattice structure—**113**, 1696(E)
—— (see Wikner, E. G.)—**113**, 1696(E)
Daunt, J. G. (see Brewer, D. F.)—**115**, 836; **115**, 843
Davidson, Robert E. Crystal atom spacing and wavelength of incident atom beam—**115**, 570
Davis, D. D. (see Bozorth, R. M.)—**115**, 1595
Davis, Robert H. Nuclear band structure in Sc^{41}—**115**, 1679
—— (see Gabbard, Fletcher)—**114**, 201
Davis, Sumner P. (see Melissinos, Adrian C.)—**115**, 130
Davis, V. W. (see Singh, J. J.)—**115**, 170
Davis, W. D. Lifetimes and capture cross sections in Au-doped Si—**114**, 1006
Dawson, John W. Nonlinear electron oscillations in cold plasma—**113**, 383
Day, Paul P. (see Porter, Fred T.)—**114**, 1286
Day, Robert B., R. L. Mills, J. E. Perry, Jr., and F. Scherb. Total cross section for n-p scattering at 20 Mev—**114**, 209
—— (see Kloepper, Robert M.)—**114**, 240
De Alfaro, V. (see Bosco, B.)—**115**, 215
deBen, Hillery S. (see Deslattes, Richard D.)—**115**, 71
DeBenedetti, S. (see McGervey, J.)—**114**, 495
Dechand, Charles O. Strange particle production by Bev neutrons in propane—**115**, 1730

de Gennes, P.-G., C. Kittel, and A. M. Portis. Theory of ferromagnetic resonance in rare earth garnets. II. Line widths—**116**, 323
Dell, G. F. (see Lackner, H. A.)—**114**, 560
de Munari, G. M. (see Conversi, M.)—**114**, 1150
Deser, Stanley, Walter Gilbert, and E. C. G. Sudarshan. Structure of vertex function—**115**, 731
—— (see Arnowitt, R.)—**113**, 745; **116**, 1322
de-Shalit, A. Effective charge of neutrons in nuclei—**113**, 547
Deslattes, Richard D. and Hillery S. deBen. *K*-absorption edge of Se—**115**, 71
DeSorbo, Warren and David Turnbull. Kinetics of vacancy motion in high-purity Al—**115**, 560
d'Espagnat, B. and J. Prentki. Up-down asymmetries of Σ and Λ decays—**114**, 1366
Devlin, G. E. (see Schawlow, A. L.)—**113**, 120; **116**, 626
deWit, G. and J. S. Koehler. Interaction of dislocations with applied stress in anisotropic crystals—**116**, 1113
—— (see Koehler, J. S.)—**116**, 1121
deWit, Roland. Self-energy of helical dislocation—**116**, 592
deZafra, R. L. Effect of impurities of angular correlation of positron annihilation radiation—**113**, 1547; **115**, 1779(E)
Diamond, Herbert (see Coté, R. E.)—**114**, 505
—— (see Vandenbosch, Susanne E.)—**115**, 115
Dickey, J. E. (see Huntington, H. B.)—**113**, 1696(E)
Dienes, G. J. (see Damask, A. C.)—**113**, 781
Dillman, L. T., R. W. Henry, N. B. Gove, and R. A. Becker. Scintillation studies of some neutron-deficient isotopes of Lu—**113**, 635
—— (see Henry, R. W.)—**113**, 1090
Dirac, P. A. M. Fixation of coordinates in Hamiltonian theory of gravitation—**114**, 924
Dobrov, W. I., R. F. Vieth, and M. E. Browne. Electron paramagnetic resonance in $SrTiO_3$—**115**, 79
Domanic, Fahri and Eugene T. Patronis, Jr. Slow-neutron resonances in Eu^{151} and Eu^{153}—**114**, 1577
Domb, C., A. A. Maradudin, E. W. Montroll, and G. H. Weiss. Vibration frequency spectra of disordered lattices. I. Moments of spectra for disordered linear chains—**115**, 18
——, **A. A. Maradudin, E. W. Montroll, and G. H. Weiss.** Vibration frequency spectra of disordered lattices. II. Spectra of disordered one-dimensional lattices—**115**, 24
Donahue, T. M. (see Curran, R.)—**114**, 490
Donohue, Jerry. Crystal structure of He isotopes—**114**, 1009
Dostrovsky, I., Z. Fraenkel, and G. Friedlander. Monte Carlo calculations of nuclear evaporation processes. III. Applications to low-energy reactions—**116**, 683
Douglas, R. A. (see Bashkin, S.)—**114**, 1543; **114**, 1552
Downs, B. W. and R. H. Dalitz. Analysis of Λ-hypernuclear three-body systems—**114**, 593
Draper, James E. Self-indication resonance neutron experiments with Ag (2–200 ev)—**114**, 1124
—— 0–600 kev γ-ray spectra from thermal neutron capture in region $A = 104$ to 198—**114**, 268
Dreeben, Arthur B. (see Bube, Richard H.)—**115**, 1578
Dreicer, H. Electron and ion run-away in fully ionized gas. I—**115**, 238
Dreitlein, J. F. Nucleon structural corrections to first forbidden unique β transitions—**116**, 1604
Drell, S. D. and S. Fubini. Higher electromagnetic corrections to electron-proton scattering—**113**, 741
—— (see Bjorken, J. D.)—**114**, 1368
Dresher, J. (see Kallmann, H.)—**114**, 71
Dresner, Lawrence. Spacing of nuclear energy levels—**113**, 633
Dresselhaus, G. Exchange energy of electron gas in strong magnetic field—**114**, 736
Dropesky, B. J. (see Bunker, M. E.)—**116**, 143
Drummond, W. E. Nucleon correlation effects in high-energy electron scattering—**116**, 183
Dudziak, Walter F., Ryokichi Sagane, and James Vedder. Positron spectrum from decay of μ meson—**114**, 336
Duffy, William, Jr. Magnetic moment of triton in units of magnetic moment of proton—**115**, 1012
Dunbar, D. N. F. (see Hebbard, D. F.)—**115**, 624
Duneer, Arthur G., Jr. Angular correlation of Cd^{114} γ rays in single crystals of In—**116**, 999
Durand, Loyal, III. Inelastic electron-deuteron scattering cross sections at high energies—**115**, 1020
Dutton, D. B. (see Eby, J. E.)—**116**, 1099
Dyal, Palmer and John P. Hummel. Excitation function for $V^{51}(\gamma,\alpha)Sc^{47}$ reaction—**115**, 1264
—— (see O'Connell, J.)—**116**, 173
Dymanus, A. Power saturation of $J = 1 \rightarrow 2$ rotational transition of OCS—**116**, 351

Eby, J. E., K. J. Teegarden, and D. B. Dutton. Ultraviolet absorption of alkali halides—**116**, 1099
Eccles, S. F. and D. Bodansky. 7.65-Mev state of C^{12}—**113**, 608
Edwards, P. L. Magnetic properties of Mn chromite-aluminates—**116**, 294
Edwards, Steve, Jr. Effect of mode mixtures on n-γ correlations from stripping reactions—**113**, 1277
—— (see Owen, George E.)—**113**, 1575
Egelstaff, P. A. Statistics of slow-neutron "negative" energy resonances—**115**, 182
Egidi, A. (see Conversi, M.)—**114**, 1150
Ehlers, Vernon J. (see Petersen, F. Russell)—**116**, 734
Ehrenberg, Hans F., Robert Hofstadter, Ulrich Meyer-Berkhout, D. G. Ravenhall, and Stanley E. Sobottka. High-energy electron scattering and charge distribution of C^{12} and O^{16}—**113**, 666
Ehrenreich, H. and M. H. Cohen. Self-consistent field approach to many-electron problem—**115**, 786
Eisen, F. H. and P. W. Bickel. Electron damage thresholds in InSb—**115**, 345
Eisenhauer, C. M. (see Ghose, A.)—**113**, 49
Elliott, N. (see Hastings, J. M.)—**115**, 13
Elwyn, A., J. V. Kane, S. Ofer, and D. H. Wilkinson. Reaction $C^{12}(d,n)N^{13}$—**116**, 1490
Enck, R. C. (see Cheroff, G.)—**116**, 1091
Enge, H. A., E. J. Irwin, Jr., and D. H. Weaner. Results of stripping analysis of reaction $K^{39}(d,p)K^{40}$—**115**, 949
Erwin, A. R., Jr., J. K. Kopp, and A. M. Shapiro. Production of Σ^+ hyperons by 990-Mev positive pions in liquid H—**115**, 669
Etzel, H. W. and J. G. Allard. Optical detection of vacancies created by high-energy radiation in NaCl—**116**, 885
Everhart, E. (see Jones, P. R.)—**113**, 182
Ewan, G. T., J. S. Geiger, R. L. Graham, and D. R. McKenzie. Conversion electron spectrum of Np^{239} and level scheme of Pu^{239}—**116**, 950
Ewbank, W. Bruce, L. L. Marino, W. A. Nierenberg, H. A. Shugart, and H. B. Silsbee. Nuclear spins of Ag^{104} and Ag^{106}—**115**, 614
—— (see Petersen, F. Russell)—**116**, 734
Eyges, Leonard. Quantum-mechanical three-body problem—**115**, 1643
Ezawa, Hiroshi and Hiroomi Umezawa. Green's functions for elementary particles—**116**, 463

Fagg, L. W. (see Butler, J. W.)—**113**, 268
Fairbank, Henry A. (see Lee, D. M.)—**116**, 1359
Faire, A. C. and K. S. W. Champion. Measurements of dissociative recombination and diffusion in N_2 at low pressures—**113**, 1
Fairhall, A. W. (see Ball, J. B.)—**114**, 305
—— (see Bouchard, George H., Jr.)—**116**, 160
Fajans, J. Diffraction of thermal waves in liquid He II by spherical mirror—**116**, 1066
Faler, Kenneth T. (see Toth, Kenneth S.)—**115**, 158

Falk, David S. Green's function approximation method. I. The nucleon—**115**, 1069
—— Green's function approximation method. II. The polaron—**115**, 1074
Falk, Gottfried. Third law of thermodynamics—**115**, 249
Fallieros, S. and R. A. Ferrell. Collective enhancement of *E2* matrix elements in light nuclei—**116**, 660
Fan, H. Y. (see Caldwell, Robert S.)—**114**, 664
Fang, P. H. Conductivity of plasmas to microwaves—**113**, 13; **114**, 1652(E)
—— **and W. S. Brower.** Temperature dependence of breakdown field of $BaTiO_3$—**113**, 456
Fano, U. High-frequency limit of bremsstrahlung in Sauter approximation—**116**, 1156
——, **K. W. McVoy, and James R. Albers.** Interference of orbital and spin currents in bremsstrahlung and photoelectric effect—**116**, 1159
——, **K. W. McVoy, and James R. Albers.** Sauter theory of photoelectric effect—**116**, 1147
—— (see McVoy, Kirk W.)—**116**, 1168
Farber, Erich A. (see Kronsbein, John)—**115**, 763
Fatuzzo, E. and W. J. Merz. Switching mechanism in triglycine sulfate and other ferroelectrics—**116**, 61
Favero, Paolo G., Anna M. Mirri, and Walter Gordy. Millimeter-wave rotational spectrum of NO in $^2\pi_{3/2}$ state—**114**, 1534
Fazio, G. G. and D. M. Ritson. Search for anomalous lifetime values in sea-level cosmic radiation—**116**, 1267
—— **and M. Widgoff.** Sea-level cosmic-ray mass spectrum in interval $30m_e$–$2000m_e$—**116**, 1263
Feenberg, Eugene (see Clark, John W.)—**113**, 388
Feher, G. Electron spin resonance experiments on donors in Si. I. Electronic structure of donors by electron nuclear double resonance—**114**, 1219
—— **and E. A. Gere.** Electron spin resonance experiments on donors in Si. II. Electron spin relaxation effects—**114**, 1245
Feinberg, Gerald. Electromagnetic interaction of neutral *K* meson—**116**, 1620(E)
—— **and R. E. Behrends.** Some consequences of symmetries of strong interactions—**115**, 745
—— **and Feza Gürsey.** Space-time properties and internal symmetries of strong interactions—**114**, 1153
Feingold, Arnold M. Evidence for three-body vector forces in light nuclei—**114**, 540
Ferguson, A. J. (see Almqvist, E.)—**114**, 1040
—— (see Litherland, A. E.)—**114**, 1312
Ferrari, Fabio and Luciano Fonda. Hyperon-nucleon scattering and reaction cross sections—**114**, 874
Ferreira, Erasmo M. K^+-deuteron scattering in impulse approximation—**115**, 1727
Ferrell, R. A. (see Fallieros, S.)—**116**, 660
Fields, Paul R. (see Smith, A. B.)—**114**, 1351
—— (see Vandenbosch, Susanne E.)—**115**, 115
Filson, Daniel H. Low-temperature ultrasonic attenuation in Sn and Al—**115**, 1516
—— (see Lax, Edward)—**114**, 1273
Fink, R. W. (see Poularikas, A.)—**115**, 989
—— (see Scobie, J.)—**116**, 657
—— (see Wille, R. G.)—**114**, 1652(E)
Fiorini, E. (see Conversi, M.)—**114**, 1150
Fischer, G. E. and V. K. Fischer. Study of (d,α) reactions on some light nuclei—**114**, 533
—— **and E. W. Jenkins.** Scattering of 3.7–25 Mev positive pions by H—**116**, 749
Fischer, J. (see York, C.)—**113**, 1339
Fischer, V. K. (see Fischer, G. E.)—**114**, 533
Fisher, D. E., A. Zucker, and A. Gropp. Nuclear reactions induced by N bombardment of S—**113**, 542
Fisher, Michael E. Transformations of Ising models—**113**, 969
—— **and M. F. Sykes.** Excluded volume problem and Ising model of ferromagnetism—**114**, 45
Fite, Wade L. and R. T. Brackmann. Ionization of atomic O on electron impact—**113**, 815
——, **R. T. Brackmann, David G. Hummer, and R. F. Stebbings.** Lifetime of $2S$ state of atomic H—**116**, 363
——, **R. F. Stebbings, and R. T. Brackmann.** Collisions of electrons with H atoms. IV. Excitation of Lyman-α radiation near threshold—**116**, 356
Flamand, G. and K. W. Ford. Muon capture by C^{12} and β decay of B^{12}—**116**, 1591
Fletcher, P., I. H. Solt, Jr., and R. Bell. Identification of magnetostatic modes of ferrimagnetic resonant spheres—**114**, 739
Flicker, H. (see Atkins, K. R.)—**113**, 959; **116**, 1063
Flynn, K. F. and L. E. Glendenin. Half-life and β spectrum of Rb^{87}—**116**, 744
Foland, W. D. and R. D. Present. Hydrodynamic theory of spontaneous fission—**113**, 613
Foldy, Leslie L., Kenneth W. Ford, and Donald R. Yennie. Effect of recoil on elastic scattering of high-energy electrons by zero-spin nuclei—**113**, 1147
Foley, H. M. (see Traub, J.)—**116**, 914
Fonda, Luciano (see Ferrari, Fabio)—**114**, 874
Fontana, P. (see Margenau, H.)—**115**, 87
Ford, Kenneth W. (see Flamand, G.)—**116**, 1591
—— (see Foldy, Leslie L.)—**113**, 1147
Foreman, Bruce M., Jr., Walter M. Gibson, Richard A. Glass, and Glenn T. Seaborg. Spallation-fission competition in heavy element reactions: $Th^{232}+He^4$ and $U^{233}+d$—**116**, 382
Forstat, H., G. Taylor, and R. D. Spence. Evidence for antiferromagnetism in $CoBr_2 \cdot 6H_2O$—**116**, 897
Fosdick, Lloyd D. Calculation of order parameters in binary alloy by Monte Carlo method—**116**, 565
Fowler, J. L. (see Cohn, H. O.)—**114**, 194
Fowler, R. G. and W. R. Atkinson. Electron recombination in atomic H—**113**, 1268
Fowler, William A. (see Becker, Robert A.)—**115**, 1410
Fowler, William B., Richard L. Lander, and Wilson M. Powell. Neutral *K* meson as particle mixture—**113**, 928
Fraenkel, Z. (see Dostrovsky, I.)—**116**, 683
Franken, Peter (see Liebes, Sidney, Jr.)—**116**, 633
Franzen, W. Spin relaxation of optically aligned Rb vapor—**115**, 850
Frazer, William R. Proposal for determining electromagnetic form factor of pion—**115**, 1763
Frederikse, H. P. R. (see Mielczarek, Eugenie V.)—**115**, 888
Freeman, A. J. Compton scattering of x-rays from Al—**113**, 176
—— Compton scattering of x-rays from nonspherical charge distributions—**113**, 169
Freier, P. S., E. P. Ney, and C. J. Waddington. Flux and energy spectrum of cosmic-ray α particles during solar maximum—**114**, 365
——, **E. P. Ney, and C. J. Waddington.** Li, Be, and B in primary cosmic radiation—**113**, 921
Frerichs, R. and R. Handy. Electroluminescence in cuprous oxide—**113**, 1191
Frey, W. F., R. E. Johnston, and J. I. Hopkins. *K*-series fluorescence yields of V, Mn, and Ne—**113**, 1057
Fried, Herbert M. Structure theorem for photon propagator—**115**, 220
Friedberg, S. A. (see Guthrie, G. L.)—**113**, 45
Friedlander, G. (see Dostrovsky, I.)—**116**, 683
Friedman, J. I. Application of sum rules to electron-deuteron scattering—**116**, 1257
Friedman, L., W. Henkes, and D. Christman. C^{14}-N^{14} mass difference and mass excesses of some light nuclides—**115**, 166
Frisken, W. R. (see Taylor, H. W.)—**114**, 127
Fritzsche, H. Piezoresistance of *n*-type Ge—**115**, 336

—— **and K. Lark-Horovitz.** Effect of minority carriers on impurity conduction in p-type Ge—**113**, 999
Froese, Charlotte. Initial estimates for self-consistent field calculations for atoms with large atomic number—**116**, 900
Fronsdal, Christian. Completion and embedding of Schwarzschild solution—**116**, 778
—— Unitary irreducible representations of Lorentz group—**113**, 1367
—— **and H. Überall.** μ-meson decay with inner bremsstrahlung—**113**, 654
Frosch, C. J. (see Spitzer, W. G.)—**113**, 133
Fry, W. F. (see Camerini, U.)—**115**, 1048
Frye, Graham. Radiative capture of K mesons from orbital P states of K-mesonic atoms—**113**, 688
Fubini, S. and D. Walecka. Dispersion analysis of possible parity nonconservation in low-energy pion-nucleon scattering—**116**, 194
—— (see Cini, M.)—**114**, 1633; **115**, 1779(E)
—— (see Drell, S. D.)—**113**, 741
Fujii, Akihiko and Masaaki Kawaguchi. Decay of hyperons and mesons from universal Fermi interaction—**113**, 1156; **114**, 1652(E)
Fujii, Tadao A. Elastic scattering of 150-Mev negative pions by nuclei—**113**, 695
Fujimoto, Y. (see Aizu, H.)—**116**, 436
Fujita, S. Pair distribution function and two-body propagator—**115**, 1335
Fukui, Shuji, Takashi Kitamura, and Yuzuru Watase. "Anomalous" scattering of μ mesons—**113**, 315
Fulco, Jose R. Effective mean free path of antinucleons in nuclear matter—**114**, 374
—— (see Ball, James S.)—**113**, 647
Fulmer, Clyde B. Total reaction and elastic scattering cross sections for 22.8-Mev protons on U isotopes—**116**, 418
Fulton, Thomas and Philip Schwed. Elastic nucleon-deuteron scattering in soluble model as test of impulse approximation—**115**, 973

Gabbard, Fletcher, Robert H. Davis, and T. W. Bonner. Study of neutron reactions $Li^6(n,\alpha)H^3$, $F^{19}(n,\gamma)F^{20}$, and $I^{127}(n,\gamma)I^{128}$—**114**, 201
Galey, J. A. (see Morrison, G. C.)—**116**, 1583
Gallagher, C. J., Jr., J. O. Newton, and Virginia S. Shirley. Decay of 13-hr Re^{182}—**113**, 1298
Gallmann, A. (see Alburger, D. E.)—**116**, 939
Galt, J. K., W. A. Yager, F. R. Merritt, B. B. Cetlin, and A. D. Brailsford. Cyclotron absorption in metallic Bi and its alloys—**114**, 1396
Galzenati, E. and B. Vitale. Heavy-meson—hyperon relative parity and sign of Coulomb interference in $K^- - p$ scattering—**113**, 1635
Gamba, A. (see Bose, S. K.)—**113**, 1661
Gandy, H. W. Optical transmission of heat-treated $SrTiO_3$—**113**, 795
Gardner, C. S. Adiabatic invariants of periodic classical systems—**115**, 791
Gardner, Calvin C. (see Anderson, John D.)—**115**, 1010
—— (see Wong, C.)—**116**, 164
Gardner, Donald G. and W. Wayne Meinke. Search for isotope Ir^{198}—**114**, 822
Garfunkel, M. P. (see Biondi, Manfred A.)—**116**, 853; **116**, 862
Garland, C. W. (see Slutsky, L. J.)—**113**, 167
Gartenhaus, S. and R. Blankenbecler. Photoproduction of π mesons—**116**, 1305
—— **and C. N. Lindner.** Nucleon form factors from electroproduction of pions—**113**, 917
—— (see Blankenbecler, R.)—**116**, 1297
Gärtner, Wolfgang W. Depletion-layer photoeffects in semiconductors—**116**, 84
—— (see Mette, Herbert)—**115**, 537
Garvin, Hugh L., Thomas M. Green, Edgar Lipworth, and William A. Nierenberg. Hfs and nuclear moments of Br^{82}—**116**, 393
Garwin, E. L., W. Kernan, C. O. Kim, and C. M. York. Charge exchange scattering of 128-Mev negative pions on H—**115**, 1295
—— (see Penfold, A. S.)—**114**, 1139; **114**, 1324; **115**, 420; **116**, 120
Garwin, H. L. γ-ray excitation of 15.1-Mev level in C^{12}—**114**, 143
Garwin, R. L. and H. A. Reich. Self-diffusion and nuclear relaxation in He^3—**115**, 1478
Gatto, R. (see Cabibbo, N.)—**116**, 1334
Gauthé, Bernard. Electron characteristic energy losses in some intermetallic compounds—**114**, 1265
Gavrila, Mihai. Relativistic K-shell photoeffect—**113**, 514
Geiger, J. S. (see Ewan, G. T.)—**116**, 950
Gelles, I. L. (see Smith, W. V.)—**115**, 1546
Gentry, R. (see Theimer, O.)—**116**, 787
George, W. D. (see Barber, W. C.)—**116**, 1551
Gerbracht, R. J. (see Norbeck E.)—**116**, 1560
Gere, E. A. (see Feher, G.)—**114**, 1245
Gerhart, J. B., F. H. Schmidt, H. Bichsel, and J. C. Hopkins. Longitudinal polarization of positrons from decay of O^{14}—**114**, 1095
Ghose, A., H. Palevsky, D. J. Hughes, I. Pelah, and C. M. Eisenhauer. Lattice vibrations in Ge by scattering of cold neutrons—**113**, 49
Ghosh, S. (see Sengupta, S.)—**115**, 1681
Gibbons, D. F. Thermal expansion coefficients of MnF—**115**, 1194
—— **and C. A. Renton.** Change in velocity of sound between normal and superconducting states in Sn—**114**, 1257
Gibbons, J. H. and R. L. Macklin. Total neutron yields from light elements under proton and α bombardment—**114**, 571
——, **R. L. Macklin, J. B. Marion, and H. W. Schmitt.** Precision measurement of $Be^9(\gamma,n)$ cross section—**114**, 1319
Gibson, G., W. A. S. Lamb, and E. J. Lauer. Injection into thermonuclear machines using beams of neutral deuterium atoms in range from 100 kev to 1 Mev—**114**, 937
Gibson, Walter M. (see Foreman, Bruce M., Jr.)—**116**, 382
—— (see McKee, J. S. C.)—**115**, 143
Gilbert, Walter (see Deser, Stanley)—**115**, 731
Gillis, Joseph and George Weiss. Nature of singularities in spectrum of one-dimensional ionic lattice—**115**, 1520
Gilson, J. G. Dispersion relation for nonlinear vacuum polarization effects—**115**, 752
Gindler, J. E., J. Gray, Jr., and J. R. Huizenga. Neutron fission cross sections of Pu^{236} and Pu^{237}—**115**, 1271
Girardeau, M. Weak-coupling expansion for ground-state energy of a many-boson system—**115**, 1090
—— **and R. Arnowitt.** Theory of many-boson systems: pair theory—**113**, 755
Girifalco, L. A. and V. G. Weizer. Application of Morse potential function to cubic metals—**114**, 687
Givens, M. Parker (see Axelrod, Norman N.)—**115**, 97
Glahe, H. C. (see Jain, P. L.)—**116**, 458
Glaser, D. A. (see Roellig, L. O.)—**116**, 1001
Glass, Richard A. (see Foreman, Bruce M., Jr.)—**116**, 382
Glassgold, A. E., Warren Heckrotte, and Kenneth M. Watson. Linked-diagram expansions for quantum statistical mechanics—**115**, 1374
Gleason, G. I. Disintegration scheme of Zn^{65}—**113**, 287
Glendenin, L. E. (see Flynn, K. F.)—**116**, 744
Glendenning, Norman K. Theory of direct-interaction inelastic scattering—**114**, 1297
Gold, Albert and Robert S. Knox. Excited state wave functions, excitation energies, and oscillator strengths for $Ne(2p^5 3s)$—**113**, 834

Gold, Louis. Hot electron behavior in Ge under influence of magnetic field—**114**, 691
Gold, Wallace (see Spruch, Larry)—**113**, 1060
Goldberg, J. N. (see Newman, E.)—**114**, 1391
Goldberger, M. L. and S. B. Treiman. Soluble problem in dispersion theory—**113**, 1663
Goldburg, Walter I. Approach to Boltzmann equilibrium of nuclear spins in quadrupolar solid—**115**, 48
Goldemberg, J. (see O'Connell, J.)—**116**, 173
Goldhaber, Gerson (see Chamberlain, Owen)—**113**, 1615
Goldhammer, Paul. Theoretical calculation of binding energy of O^{16}—**116**, 676
Goldman, D. T. (see Brueckner, K. A.)—**116**, 424
Goldman, J. E. (see Guthrie, G. L.)—**113**, 45
Goldring, G. (see Birk, M.)—**116**, 730
Goldstein, Louis. Thermal excitations in liquid He^3—**113**, 1697(E)
Goldstein, P. (see Chidley, B.)—**116**, 1015
Gomes, L. C. Imaginary part of optical potential—**116**, 1226
Good, J. D. Pion spectrum in radiative K_{τ}^{+} decay—**113**, 352
Good, Myron L. (see Crawford, Frank S., Jr.)—**113**, 1601
Good, R. H., Jr. (see Liu, S. H.)—**116**, 1464
Goode, D. H. and P. A. Schroeder. Aggregation of *F* centers in KI—**115**, 1426
Goodenough, J. B. (see Wichkam, D. J.)—**115**, 1156
Gordy, Walter (see Favero, Paolo G.)—**114**, 1534
Gossett, C. R. and J. W. Butler. Neutron thresholds in $V^{51}(p,n)Cr^{51}$, $Mn^{55}(p,n)Fe^{55}$, $Zn^{70}(p,n)Ga^{70}$, and $As^{75}(p,n)$-Se^{75} reactions—**113**, 246
Gottstein, Klaus (see Crawford, Frank S., Jr.)—**113**, 1601
Gove, H. E. and A. E. Litherland. Study of levels in O^{18} through radiative capture of α particles by C^{14}—**113**, 1078
—— (see Almqvist, E.)—**114**, 1040
—— (see Bromley, D. A.)—**114**, 758
—— (see Kuehner, J. A.)—**114**, 775
—— (see Litherland, A. E.)—**114**, 1312
Gove, N. B. (see Dillman, L. T.)—**113**, 635
—— (see Henry, R. W.)—**113**, 1090
Graham, R. L. (see Ewan, G. T.)—**116**, 950
Gray, J., Jr. (see Gindler, J. E.)—**115**, 1271
Green, A. E. S. (see Tang, Y. C.)—**116**, 402
Green, Thomas M. (see Garvin, Hugh L.)—**116**, 393
Greenberg, O. W. Haag's theorem and clothed operators—**115**, 706
Greider, Kenneth R. Deuteron pickup reaction in optical model approximation—**114**, 786
Greiner, J. D. (see Smith, J. F.)—**115**, 884
Grench, H. A. (see Burson, S. B.)—**115**, 188
Griem, Hans R., Alan C. Kolb, and K. Y. Shen. Stark broadening of hydrogen lines in plasma—**116**, 4
Griffin, James J. Energy dependence of fission fragment anisotropy—**116**, 107
Gropp, A. (see Fisher, D. E.)—**113**, 542
Gross, Bernhard and Kenneth A. Wright. Charge distribution and range effects produced by 3-Mev electrons in Plexiglas and Al—**114**, 725
Gross, Gordon E. Dependence of forbidden gap and luminescence ground-state energies of (ZnCd)S:Ag on concentration of CdS—**116**, 1478
Grover, J. Robb. Mass assignments and some decay characteristics of Gd^{145}, Eu^{145}, Gd^{146}, and Eu^{146}—**116**, 406
Gryziński, Michał. Classical theory of electronic and ionic inelastic collisions—**115**, 374
—— Role of fusion chain reactions in nonstationary evolution of stars—supernova stars—**115**, 1087
Gunnink, R. and J. W. Cobble. Radiochemical studies of fission of U^{235} by He ions—**115**, 1247
Gunter, William D., Jr., and Robert A. Hubbs. Revised Weizsäcker semiempirical formula for diffuse nuclear surfaces—**113**, 252; **113**, 1697(E)
Gupta, K. K. and R. D. Lawson. Effect of configuration mixing on magnetic multipole radiation—**114**, 326
—— **and V. S. Mathur.** Electromagnetic properties of superconductors—**115**, 75
Gürsey, Feza (see Feinberg, Gerald)—**114**, 1153
Guthrie, G. L. Heat capacity of pseudo-Cu below 4.2°K—**113**, 793
——, **S. A. Friedberg, and J. E. Goldman.** Specific heats of some Cu-rich Cu-Ni alloys—**113**, 45

Haas, R., L. B. Leipuner, and R. K. Adair. Conservation of parity in strong interactions—**116**, 1221
Haeberli, W. (see Vorona, J.)—**116**, 1563
Halbert, M. L. and A. Zucker. Elastic scattering of N^{14} by Be^9—**115**, 1635
—— **and A. Zucker.** Light-particle spectra from N bombardment of O—**114**, 132
—— (see Pinajian, J. J.)—**113**, 589
Hall, George L. Nordheim's theory of resistivity of alloys—**116**, 604
Hall, H. E., A. O. Hanson, and D. Jamnik. Most probable energy loss of fast electrons—**115**, 633
Hall, P. M., S. Legvold, and F. H. Spedding. Electrical resistivity of Y single crystals—**116**, 1446
Hall, William J. (see Powell, Robert L.)—**115**, 314
Halperin, A. and H. Arbell. Excitation spectra and temperature dependence of luminescence of ZnS single crystals—**113**, 1216
——, **N. Kristianpoller, and A. Ben-Zvi.** Thermoluminescence of x-ray colored NaCl crystals—**116**, 1081
—— **and M. Schlesinger.** Effect of thermal pretreatment on thermoluminescence of KCl crystals—**113**, 762
Halpern, I. (see Ball, J. B.)—**114**, 305
—— (see Nicholson, W. J.)—**116**, 175
Hamilton, J. Dispersion relations for *p-n* scattering—**114**, 1170
Handler, Paul and William M. Portnoy. Electronic surface states and cleaned Ge surface—**116**, 516
Handley, T. H. (see Harmatz, B.)—**114**, 1082
Handy, R. (see Frerichs, R.)—**113**, 1191
Hanlon, Jacque E. and A. W. Lawson. Effective ionic charge in alkali halides—**113**, 472
Hanna, S. S. and Luise Meyer-Schützmeister. Resonant absorption by 9.17-Mev level in N^{14}—**115**, 986
Hanson, A. O. (see Hall, H. E.)—**115**, 633
Harkness, A. L. (see Wing, J.)—**114**, 163
Harmatz, B., T. H. Handley, and J. W. Mihelich. Nuclear spectroscopy of odd-mass (161–173) nuclides produced by proton irradiation of Er and Yb—**114**, 1082
—— (see Bichard, J. W.)—**116**, 720
Harmer, D. S. and M. L. Perlman. Study of *K* capture-positron ratio of transition $I^{126}(2-) \rightarrow Te^{126}(2+)$—**114**, 1133
Harnik, E. (see Ben Sira, M. Y.)—**115**, 554
Harrick, N. J. Metal to semiconductor contacts: injection or extraction for either direction of current flow—**115**, 876
Harris, G. (see Taylor, S.)—**114**, 359
Harrison, B. Kent. Exact three-variable solutions of field equations of general relativity—**116**, 1285
Harrison, F. B. (see Argo, H. V.)—**114**, 626
Harrison, Walter A. Fermi surface in Al—**116**, 555
Hart, E. L., G. Cocconi, V. T. Cocconi, and J. M. Sellen. Electron pair production in field of proton and in field of electron by photons of energy from 10 Mev to 1 Bev.—**115**, 678
—— (see Sellen, J. M.)—**113**, 1323
Hart, Edward W. Thermodynamics of inhomogeneous systems—**113**, 412
—— Thermodynamics of inhomogeneous systems.II—**114**, 27
Hartman, Paul L. (see Taylor, John W.)—**113**, 1421
Hasegawa, S. (see Aizu, H.)—**116**, 436
Hashimoto, Y. and W. Parker Alford. Violation of isotopic spin selection rule in $Ca^{40}(d,\alpha)K^{38}$ reaction—**116**, 981

Haskin, D. M. (see Schein, Marcel)—116, 1238
Hastings, J. M., N. Elliott, and L. M. Corliss. Antiferromagnetic structures of MnS_2, $MnSe_2$, and $MnTe_2$—115, 13
Hasty, T. E., W. B. Ard, Jr., and W. G. Moulton. Structure of *V* centers in irradiated $KClO_3$—116, 1459
Hatch, E. N. (see Warburton, E. K.)—114, 214
Hausman, H. J. (see Lackner, H. A.)—114, 560
Havas, Peter. Equations of motion of point particles in fields of nonzero rest mass and spin—113, 732
—— Multipole singularities of classical vector and pseudovector fields—116, 202
Havens, W. W., Jr., E. Melkonian, L. J. Rainwater, and J. L. Rosen. Resonance fission widths of U^{235} for levels from 6 ev to 50 ev—116, 1538
—— (see Melkonian, E.)—114, 1571
Haymes, Robert C. High-altitude neutron intensity diurnal variation—116, 1231
Haynes, S. K. (see Achor, W. T.)—114, 137
Heath, R. L. (see Schuman, R. P.)—115, 185
Hebbard, D. F. and D. N. F. Dunbar. Elastic scattering and capture of protons by C^{14}—115, 624
—— (see Povh, V.)—115, 608
Hebel, L. C. Theory of nuclear spin relaxation in superconductors—116, 79
—— **and C. P. Slichter.** Nuclear spin relaxation in normal and superconducting Al—113, 1504
Heckrotte, Warren (see Glassgold, A. E.)—115, 1374
Henderson, D. J. (see Ramler, W. J.)—114, 154
Henkes, Wolfgang. Radiations from Ba^{129}—113, 863
—— (see Friedman, L.)—115, 166
Henley, Ernest M. and Boris A. Jacobsohn. Time reversal in nuclear interactions—113, 225
—— (see Jacobsohn, Boris A.)—113, 234
Henry, R. W., L. T. Dillman, N. B. Gove, and R. A. Becker. Coincidence studies in decay of Tb^{156} and Tb^{154}—113, 1090
—— (see Dillman, L. T.)—113, 635
Hensel, J. C. and Martin Peter. Stark effect for cyclotron resonance in degenerate bands—114, 411
Hensley, Eugene B. (see Saum, George A.)—113, 1019
Hereford, F. L. (see Bucher, W. P.)—115, 961
Herrmannsfeldt, W. B. (see Allen, J. S.)—116, 134
Hess, Wilmot N., H. Wade Patterson, Roger Wallace, and Edward L. Chupp. Cosmic-ray neutron energy spectrum—116, 445
Hibdon, Carl T. Distribution of angular momenta, level spacings, and neutron widths of Al^{28}—114, 179
Hill, D. E. Electron bombardment of Si—114, 1414
Hinman, G. (see Chidley, B.)—116, 1015
Hirshfield, Jay L. (see Bekefi, G.)—116, 1051
Hirth, J. P. (see Lothe, J.)—115, 543
Hoffman, R. W. (see Knorr, T. G.)—113, 1039; 116, 1620(E)
Hofmann, F. W. (see Schneider, Jürgen)—116, 244
Hofstadter, Robert (see Ehrenberg, Hans F.)—113, 666
Holladay, W. G. Anomalous magnetic moments of baryons in static cutoff perturbation theory—115, 1331
—— (see Thomas, Billy S.)—115, 1329
Holland, R. E. and F. J. Lynch. Reaction $A^{40}(p,n)K^{40}$ and decay of K^{40}—113, 903
—— (see Lynch, F. J.)—114, 825
Holloway, J. T. and L. Jackson Laslett. Radiations from Tb^{156}—113, 1581
Holmgren, H. D. and R. L. Johnston. $H^3(\alpha,\gamma)Li^7$ and $He^3(\alpha,\gamma)Be^7$ reactions—113, 1556
——, **E. A. Wolicki, and R. L. Johnston.** $B^{11}(He^3,p)C^{13}$ and $B^{11}(He^3,d)C^{12}$ reactions—114, 1281
—— (see Butler, J. W.)—113, 268; 116, 1485
—— (see Wolicki, E. A.)—116, 1585
Holmstrom, F. E. (see Barrett, W. A.)—113, 661
Holstein, T. Theory of ultrasonic absorption in metals: collision-drag effect—113, 479
Hooke, W. M. Magnetic moments of strongly deformed odd-odd nuclei—115, 453
Hopfield, J. J. (see Thomas, D. G.)—116, 573
Hopkins, J. C. (see Gerhart, J. B.)—114, 1095
Hopkins, J. I. (see Achor, W. T.)—114, 137
—— (see Frey, W. F.)—113, 1057
Horen, Daniel J. Decay of radioisotopes Ge^{68} and Ga^{68}—113, 572
——, **W. E. Meyerhof, J. J. Kraushaar, D. O. Wells, E. Brun, and J. E. Neighbor.** Decay of As^{74}—113, 875
Horwitz, Nahmin, Donald Miller, Joseph Murray, and Robert Tripp. Low-energy antiproton interactions in H and D—115, 472
Hoshino, S., Y. Okaya, and R. Pepinsky. Crystal structure of ferroelectric phase of $(glycine)_3 \cdot H_2SO_4$—115, 323
Howard, R. E. and R. Smoluchowski. Formation of interstitials in alkali halides by ionizing radiation—116, 314
Huang, Kerson. Energy levels of Bose-Einstein system of particles with attractive interactions—115, 765
Hubbell, John H. (see Berger, Martin J.)—113, 857
Hubbs, J. C., R. Marrus, and J. O. Winocur. Zeeman investigation of Cm^{242}—114, 586
Hubbs, Robert A. (see Gunter, William D., Jr.)—113, 252; 113, 1697(E)
Hudson, C. M. (see Meyerhof, W. E.)—115, 1227
Hugenholtz, N. M. and D. Pines. Ground-state energy and excitation spectrum of system of interacting bosons—116, 489
Hughes, D. J. (see Ghose, A.)—113, 49
Hughes, F. L. Mean adsorption lifetime of Rb on etched W single crystals. II. Neutrals—113, 1036
—— **and H. Levinstein.** Mean adsorption lifetime of Rb on etched W single crystals. I. Ions—113, 1029
——, **H. Levinstein, and R. Kaplan.** Surface properties of etched W single crystals—113, 1023
Hughes, V. W. (see Radford, H. E.)—114, 1274
Huizenga, J. R. (see Gindler, J. E.)—115, 1271
—— (see Ramler, W. J.)—114, 154
—— (see Wing, J.)—114, 163
Hulm, J. K. (see Schawlow, A. L.)—116, 626
Hummel, John P. (see Dyal, Palmer)—115, 1264
Hummer, David G. (see Fite, Wade L.)—116, 363
Hunt, A. L. (see Anderson, P. A.)—115, 550
Hunter, E. T. and J. M. Miller. Spallation of Bi by 380-Mev protons—115, 1053
Hunting, C. E. and N. S. Wall. Differential cross sections of some (α,p) reactions—115, 956
Huntington, H. B., J. E. Dickey, and Robb Thomson. Dislocation energies in NaCl—113, 1696(E)
Hurst, G. S. and T. E. Bortner. Attachment of low-energy electrons in mixtures containing O—114, 116
Hurst, R. P. Coherent atomic scattering factors for LiH crystal field—114, 746
Huzita, H. (see Camerini, U.)—115, 1048

Iddings, C. K. and P. M. Platzman. Meson corrections to hfs in H—115, 919
—— **and P. M. Platzman.** Nuclear structure correction to hfs in H—113, 192
Iddings, Glen M. (see West, Harry I., Jr.)—113, 881; 114, 1652(E)
Igo, George. Optical-model analysis of excitation function data and theoretical reaction cross sections for α particles—115, 1665
—— (see Chase, L. G., Jr.)—116, 170
Illsley, E. Geer (see Wolicki, E. A.)—116, 1585
Imhof, W. L., R. G. Johnson, F. J. Vaughn, and M. Walt. Cross sections for $Li^7(n,\gamma)Li^8$ reaction—114, 1037
Inchauspé, N. (see Knox, R. S.)—116, 1093
Irwin, E. J., Jr. (see Enge, H. A.)—115, 949

Isbell, William M. (see Bradner, Hugh)—**114**, 603
Ittner, W. B., III, and J. Marchand. Effects of dissolved gas on superconducting characteristics of Ta—**114**, 1268
—— (see Jones, R. E.)—**113**, 1520
Iyengar, P. K. (see Brockhouse, B. N.)—**113**, 1696(E)

Jacobs, I. S. and R. W. Schmitt. Low-temperature electrical and magnetic behavior of dilute alloys: Mn in Cu and Co in Cu—**113**, 459
Jacobsohn, Boris A. and Ernest M. Henley. γ-ray correlation tests for time reversal invariance in nuclear forces—**113**, 234
—— (see Henley, Ernest M.)—**113**, 225
Jain, A. L. Temperature dependence of electrical properties of Bi-Sb alloys—**114**, 1518
Jain, P. L. and H. C. Glahe. Energy determination from multiple meson production by 6.3-Bev protons in nuclear emulsion—**116**, 458
——, **E. Lohrmann, and M. W. Teucher.** Energy spectrum of heavy nuclei in cosmic radiation between 7 and 100 Bev/nucleon—**115**, 654
——, **E. Lohrmann, and M. W. Teucher.** Heavy nuclei and α particles between 7 and 100 Bev/nucleon. II. Fragmentations and meson production—**115**, 643
James, Ralph A. (see Linder, Bruno)—**114**, 322
Jamnik, D. (see Hall, H. E.)—**115**, 633
Janis, Allen I. (see Newman, Ezra T.)—**116**, 1610
Jarmie, Nelson and Robert C. Allen. $T(p,p)T$ scattering near $T(p,n)He^3$ threshold—**114**, 176
Jauneau, Louis (see Chamberlain, Owen)—**113**, 1615
Jenkins, E. W. (see Fischer, G. E.)—**116**, 749
Johnson, Fred M. and Arthur H. Nethercot, Jr. Antiferromagnetic resonance in MnF_2—**114**, 705
Johnson, Noah R. and G. D. O'Kelley. Decay properties of I^{136}—**114**, 279
Johnson, O. E. and W. G. Smith. β decay of Cd^{115m}—**116**, 992
Johnson, P. D. (see Williams, F. E.)—**113**, 97
Johnson, R. G. (see Imhof, W. L.)—**114**, 1037
Johnsrud, A. E., M. G. Silbert, and H. H. Barschall. Energy dependence of fast-neutron activation cross sections—**116**, 927
Johnston, Lawrence H. and Yung Su Tsai. p-p scattering at 90° from 28 to 68 Mev—**115**, 1293
—— **and D. E. Young.** p-p scattering at 10 Mev—**116**, 989
Johnston, R. E. (see Frey, W. F.)—**113**, 1057
Johnston, R. L. (see Holmgren, H. D.)—**113**, 1556; **114**, 1281
—— (see Wolicki, E. A.)—**116**, 1585
Johnston, W. H. (see Conway, D. C.)—**116**, 1544
Jones, P. R., F. P. Ziemba, H. A. Moses, and E. Everhart. Total cross sections for multiple electron stripping in atomic collisions at energies to 100 kev—**113**, 182
Jones, R. E. and W. B. Ittner. Superconductivity of In_2Bi—**113**, 1520
Jorgensen, M. (see Toth, K. S.)—**116**, 118
Juliano, Jose O., C. W. Kocher, T. D. Nainan, and Allan C. G. Mitchell. Disintegration of Fe^{52} and Fe^{53}—**113**, 602
—— (see Mitchell, Allan C. G.)—**113**, 628
Jurewicz, Andrzej (see Bialkowski, Grzegorz)—**116**, 1269

Kac, M. Remark on recurrence times—**115**, 1
Kaiser, W. and W. L. Bond. Nitrogen, a major impurity in common type I diamonds—**115**, 857
Kalbach, R. M., J. J. Lord, and C. H. Tsao. Elastic p-p collisions at 6.2 Bev in nuclear emulsions—**113**, 325
——, **J. J. Lord, and C. H. Tsao.** Inelastic p-p collisions at 6.2 Bev—**113**, 330
Kallmann, H. and J. Dresner. Excitation of luminescent materials by ionizing radiation—**114**, 71
——, **Bernard Kramer, and Grace Marmor Spruch.** Ac impedance measurements on insulated CdS crystals—**116**, 628
Kalogeropoulos, Theodore (see Chamberlain, Owen)—**113**, 1615
Kamiya, Y. (see Sekido, Y.)—**113**, 1108
Kanazawa, A. (see Sugawara, M.)—**115**, 1310
Kane, J. V. (see Elwyn, A.)—**116**, 1490
Kaplan, Jerome I. Application of diffusion-modified Bloch equation to electron spin resonance in ordinary and ferromagnetic metals—**115**, 575
Kaplan, R., A. H. Nethercot, Jr., and H. A. Boorse. Frequency dependence of surface resistance of superconducting Sn in mm wavelength region—**116**, 270
—— (see Hughes, F. L.)—**113**, 1023
Kaplan, T. A. Classical spin-configuration stability in presence of competing exchange forces—**116**, 888
Karp, Ira L. Studies of liquid He—**115**, 223
Karplus, Robert and Leonard S. Rodberg. Inelastic final-state interactions: K^- absorption in deuterium—**115**, 1058
——, **Charles M. Sommerfield, and Eyvind H. Wichmann.** Spectral representations in perturbation theory. II. Two-particle scattering—**114**, 376
Kasner, W. H. (see Curran, R.)—**114**, 490
Katcoff, Seymour. Energy distributions of Li^8 fragments emitted from C, Al, Cu, Ag, Au, and U bombarded by 2.2-Bev protons—**114**, 905
Katsura, Shigetoshi. Fourth virial coefficient for square well potential—**115**, 1417
Katz, Robert and Darrell R. Parnell. Two proposed experiments for detection of Dirac monopole—**116**, 236
Kawaguchi, Masaaki (see Fujii, Akihiko)—**113**, 1156; **114**, 1652(E)
Keesom, P. H. and G. Seidel. Specific heat of Ge and Si at low temperatures—**113**, 33
Keffer, F. and T. Oguchi. Theory of superexchange—**115**, 1428
——, **T. Oguchi, W. O'Sullivan, and J. Yamashita.** Theory of nuclear magnetic resonance shift in paramagnetic crystals—**115**, 1553
Keller, Seymour P. Stimulated infrared emission from Sm centers in SrS phosphors—**113**, 1415
—— **and George D. Pettit.** A phosphor with fluorescence larger than energy gap—**113**, 785
—— **and G. D. Pettit.** Optical properties of activated and unactivated hexagonal ZnS single crystals—**115**, 526
—— (see Casella, R. C.)—**116**, 1469
—— (see Cheroff, G.)—**116**, 1091
Kelly, Martin (see Spruch, Larry)—**116**, 911
Kennedy, Anthony J. (see Marcus, Paul M.)—**114**, 459
Kennedy, C. A. (see Bondelid, R. O.)—**115**, 1601
Kenney, Robert W. (see Knapp, Edward A.)—**114**, 605
Kent, D. W., Jr. (see Machwe, M. K.)—**114**, 1563
Kern, Bernard D. (see Kreger, William E.)—**113**, 890
Kernan, W. (see Garwin, E. L.)—**115**, 1295
—— (see York, C.)—**113**, 1339
Kernel, G. (see Mihailović, M. V.)—**114**, 1621
Kerr, E. C. (see Yarnell, J. L.)—**113**, 1379
Kerr, R. J. (see Brosi, A. R.)—**113**, 239
Ketelle, B. H. and A. R. Brosi. Radioactive decay of Dy^{159}—**116**, 98
—— (see Brosi, A. R.)—**113**, 239
Keuffel, J. W. (see Barrett, W. A.)—**113**, 661
Keyes, Robert W. High-temperature thermal conductivity of insulating crystals: relationship to melting point—**115**, 564
Kienle, Paul and R. E. Segel. Decay of Co^{56} and Mn^{56}—**114**, 1554
—— **and R. E. Segel.** Relative pulse height of protons and electrons in KI(Tl)—**113**, 909
Kim, C. O. (see Garwin, E. L.)—**115**, 1295
Kinase, Wataru, Jinzo Kobayashi, and Noboru Yamada. Optical anisotropy of tetragonal $BaTiO_3$—**116**, 348
Kinoshita, Toichiro. Ground state of He atom. II—**115**, 366

—— **and Alberto Sirlin.** Radiative corrections to Fermi interactions—**113**, 1652
Kippe, Heinz (see Lieb, Elliott)—**116**, 367
Kisslinger, L. S. Nuclear structure effects in internal conversion coefficients by configuration mixing—**114**, 292
Kistner, O. C. and B. M. Rustad. Ratio of Gamow-Teller and Fermi coupling constants determined from *ft* values—**114**, 1329
Kitamura, Takashi (see Fukui, Shuji)—**113**, 315
Kittel, C. Theory of ferromagnetic resonance in rare earth garnets. I. *g* values—**115**, 1587
—— (see de Gennes, P.-G.)—**116**, 323
Kivel, Bennett. Elastic scattering of low-energy electrons by A—**116**, 926
—— Electron scattering by noble gases in limit of zero energy—**116**, 1484
—— (see Lin, S. C.)—**114**, 1026
Kjeldaas, T., Jr. Theory of ultrasonic cyclotron resonance in metals at low temperatures—**113**, 1473
Klein, Abraham. Many-particle approach to one-electron problem in insulators and semiconductors—**115**, 1136
Klein, C. A. (see Rupprecht, G.)—**116**, 342
Klein, L. (see Margenau, H.)—**115**, 87
Klein, M. P. and J. S. Waugh. Cd^{111}-Cd^{113} nuclear moment ratio and hyperfine anomaly—**116**, 960
Kleinman, D. (see Spitzer, W. G.)—**113**, 127; **113**, 133
Kleinman, Leonard and James C. Phillips. Crystal potential and energy bands of semiconductors. I. Self-consistent calculations for diamond—**116**, 880
—— (Phillips, James C.)—**116**, 287
Kloepper, Robert M., Robert B. Day, and David A. Lind. Lifetimes of first excited 0^+ states of Ca^{40} and Zr^{90}—**114**, 240
Kmetko, E. A. Anomalous thermionic emission of UC and other compounds involving rare earth and transition metals —**116**, 895
Knapp, Edward A., Robert W. Kenney, and Victor Perez-Mendez. Angular distributions of photopions from H—**114**, 605
Knecht, David J., S. Messelt, E. D. Berners, and L. C. Northcliffe. *p-p* scattering from 1.4 to 2.4 Mev—**114**, 550
Knight, J. D. (see Bunker, M. E.)—**116**, 143
Knorr, T. G. and R. W. Hoffman. Dependence of geometric magnetic anisotropy in thin Fe films—**116**, 1620(E)
—— **and R. W. Hoffman.** Geometric dependence of magnetic anisotropy in thin Fe films—**113**, 1039
Knowles, J. W., G. Manning, G. A. Bartholomew, and P. J. Campion. γ rays following thermal neutron capture in Ti—**114**, 1065
Knox, Robert S. Configuration interaction in alkali halide phosphors—**115**, 1095
—— **and N. Inchauspé.** Exciton states in ionic crystals—**116**, 1093
—— (see Gold, Albert)—**113**, 834
Knox, W. J. (see Quinton, A. R.)—**115**, 886
Kobayashi, Jinzo (see Kinase, Wataru)—**116**, 348
Kobayashi, Koichi and Frederick C. Brown. Hall effect for electrons in AgCl—**113**, 507
Kocher, C. W. (see Juliano, Jose O.)—**113**, 602
—— (see Mitchell, Allan C. G.)—**113**, 628
Koehler, J. S. and G. deWit. Influence of elastic anisotropy on dislocation contribution to elastic constants—**116**, 1121
—— (see deWit, G.)—**116**, 1113
Koehler, W. C. (see Wilkinson, M. K.)—**113**, 497
Kohman, Truman P. (see Rightmire, Robert A.)—**113**, 1069
Kohn, Walter. Analytic properties of Bloch waves and Wannier functions—**115**, 809
—— Theory of Bloch electrons in magnetic field: effective Hamiltonian—**115**, 1460
Kolb, Alan C. (see Griem, Hans R.)—**116**, 4
Koller, E. L. and A. M. Sachs. Panofsky ratio for negative pions absorbed in H—**116**, 760
Komar, Arthur. Covariant conservation laws in general relativity—**113**, 934
Konopinski, E. J. (see Newby, Neal, Jr.)—**115**, 434
Kopp, J. K. (see Erwin, A. R., Jr.)—**115**, 669
Koppe, Heinz (see Lieb, Elliott)—**116**, 367
Koshiba, M. (see Aizu, H.)—**116**, 436
Koster, G. F. and H. Statz. Method of treating Zeeman splittings of paramagnetic ions in crystalline fields—**113**, 445
—— (see Aisenberg, Sol)—**116**, 811
—— (see Statz, H.)—**115**, 1568
Kotani, Tsuneyuki. Deviation from ξ approximation in first forbidden β decay—**114**, 795
—— **and Marc Ross.** β-γ correlations in first forbidden transition—**113**, 622
Kraichnan, Robert H. Classical fluctuation-relaxation theorem —**113**, 1181
Krall, Nicholas A. and E. E. Salpeter. Dispersive effects in electron-nucleus interactions—**115**, 457
Kramer, Bernard (see Kallmann, Hartmut)—**116**, 628
Kraushaar, J. J. (see Horen, D. J.)—**113**, 875
Kraybill, Henry L. (see Lanou, Robert E., Jr.)—**113**, 657
Kreger, M. (see Mihailović, M. V.)—**114**, 1621
Kreger, William E. and Bernard D. Kern. $C^{12}(n,p)B^{12}$ cross section for 14.9- to 17.5-Mev neutrons—**113**, 890
Kristianpoller, N. (see Halperin, A.)—**116**, 1081
Krone, R. W. (see Singh, J. J.)—**115**, 170
Kronsbein, John and Erich A. Farber. Time retardation in static and stationary spherical and elliptic spaces—**115**, 763
Kropschot, R. H. and F. J. Blatt. Thermoelectric power of cold-rolled pure Cu—**116**, 617
Kruger, Hans and Kenneth M. Crowe. Preliminary results on momentum dependence of asymmetry in muon decay—**113**, 341
Kruse, H. W. (see Argo, H. V.)—**114**, 626
Kruse, U. E. and R. C. Arnold. Scattering of negative mesons by H at 130 and 152 Mev—**116**, 1008
Krusemeyer, H. J. Surface potential, field effect mobility, and surface conductivity of ZnO crystals—**114**, 655
Kuehner, J. A., A. E. Litherland, E. Almqvist, D. A. Bromley, and H. E. Gove. Unnatural parity states in O^{16}. II—**114**, 775
—— (see Bromley, D. A.)—**114**, 758; **115**, 586
Kurnick, S. W. and John M. Powell. Optical absorption in pure single crystal InSb at 298° and 78°K—**116**, 597

Lackner, H. A., G. F. Dell, and H. J. Hausman. Evidence for direct interactions at low energy—**114**, 560
Lamb, W. A. S. (see Gibson, G.)—**114**, 937
Lampert, M. A. and A. Rose. Transient behavior of ohmic contact—**113**, 1236
—— (see Rose, A.)—**113**, 1227
Land, Robert H. Photoproduction of charged pions from deuterium—**113**, 1141
Lander, Richard L. (see Fowler, William B.)—**113**, 928
Landsberg, P. T. Negative temperatures—**115**, 518
Lanou, Robert E., Jr., and Henry L. Kraybill. Ionization loss by μ mesons in He—**113**, 657
Lantz, P. M. (see Smith, E. C.)—**115**, 1693
Laquer, Henry L., Stephen G. Sydoriak, and Thomas R. Roberts. Sound velocity and adiabatic compressibility of liquid He^3—**113**, 417
Lark-Horovitz, K. (see Fritzsche, H.)—**113**, 999
Larrabee, R. D. High-field effect in B-doped Si—**116**, 300
Lasher, G. J. (see Smith, W. V.)—**115**, 1546
Laslett, L. Jackson. (see Holloway, J. T.)—**113**, 1581
Lauer, E. J. (see Gibson, G.)—**114**, 937
Lavine, Jerome M. Ordinary Hall effect in Fe_3O_4 and $(NiO)_{0.75}(FeO)_{0.25}(Fe_2O_3)$ at room temperature—**114**, 482
Lawson, A. W. (see Hanlon, Jacque E.)—**113**, 472
Lawson, R. D. (see Gupta, K. K.)—**114**, 326
Lax, Benjamin (see Roth, Laura M.)—**114**, 90

—— (see Zwerdling, Solomon)—114, 80
Lax, Edward. Acoustic attenuation in Al due to electron-lattice interaction—115, 1591
—— **and Daniel H. Filson.** Second low-temperature peak in internal friction of Al—114, 1273
Lazarus, Alan J., W. K. H. Panofsky, and F. R. Tangherlini. Photoproduction of positive pions in H in angular range $7° < \vartheta_{c.m.} < 27°$ and photon energy range 220 Mev $< k <$ 390 Mev—113, 1330
Lazarus, D. (see Pierce, C. B.)—114, 686
—— (see Tichelaar, G. W.)—113, 438
Lea, R. (see Bierman, E.)—113, 710
Leachman, R. B. (see Blumberg, L.)—116, 102
Leamer, R. D. Internal conversion in Li^7—114, 1590
Lebowitz, J. L. Stationary nonequilibrium Gibbsian ensembles—114, 1192
Ledley, B. (see Crewe, A. V.)—114, 1361
Lee, D. M. and Henry A. Fairbank. Heat transport in liquid He^3—116, 1359
Lee, J. (see Taylor, S.)—114, 359
Lee, L. L., Jr., and F. P. Mooring. Resonance detection of neutron energy groups from $Mn^{55}(p,n)Fe^{55}$ reactions—115, 969
—— **and J. P. Schiffer.** Analysis of angular distributions in reaction $B^{11}(\alpha,p)C^{14}$—115, 160
—— (see Schiffer, J. P.)—115, 427; 115, 1705
Lee, T. D. and C. N. Yang. Low-temperature behavior of dilute Bose system of hard spheres. II. Nonequilibrium properties—113, 1406
—— **and C. N. Yang.** Many-body problem in quantum statistical mechanics. I. General formulation—113, 1165
—— **and C. N. Yang.** Many-body problem in quantum statistical mechanics. II. Virial expansion for hard-sphere gas—116, 25
Legvold, S. (see Hall, P. M.)—116, 1446
—— (see Liu, S. H.)—116, 1464
Lehman, Guy W. Effect of spin-orbit coupling on energy levels in 6*d* band for actinide metals—116, 846
Leipuner, L. B. (see Haas, R.)—116, 1221
Leiss, J. E. (see Penfold, A. S.)—114, 1332
—— (see Penner, S.)—114, 1101
Lemmer, R. H. (see Tang, Y. C.)—116, 402
Lempicki, A. Anomalous photovoltaic effect in ZnS single crystals—113, 1204
Lenk, P. A. and R. J. Slobodrian. Excitation function for $Al^{27}(d,\alpha p)Na^{24}$ reaction between 0 and 28.1 Mev—116, 1229
Leon, M. Decay of ${}_{\Lambda}H^3$ and spin dependence of Λ-nucleon interaction—113, 1604
Levesque, R. J. A. and S. M. Shafroth. Lifetime of 3.56-Mev state in Li^6—114, 1354
Levin, Jules S. (see Marion, J. B.)—114, 1584; 115, 144
Levinstein, H. (see Hughes, F. L.)—113, 1023; 113, 1029
Lewis, H. W. (see Vorona, J.)—116, 1563
Lichten, William and Sheldon Schultz. Cross sections for excitation of metastable 2*s* state of atomic H by electron collision—116, 1132
Lichtenberg, D. B. Scattering and annihilation of anti-hyperons by nucleons—113, 1309
Lide, R. W. and M. L. Wiedenbeck. Directional correlation of γ rays following decay of Eu^{152}—113, 840
Lieb, Elliott and Heinz Koppe. Mathematical analysis of simple model related to stripping reaction—116, 367
Liebermann, Leonard. Acoustical absorption arising from molecular resonance in solids—113, 1052
Liebes, Sidney, Jr., and Peter Franken. Magnetic moment of proton in units of Bohr magneton; magnetic moment of electron—116, 633
Lillethun, E. (see Crewe, A. V.)—114, 1361
Lin, Chun C. Theory of fine structure of microwave spectrum of NO_2—116, 903
Lin, S. C. and B. Kivel. Slow-electron scattering by atomic O—114, 1026
Lin, S. T. Magnetic properties of hematite single crystals. I. Magnetization isotherms, antiferromagnetic susceptibility, and weak ferromagnetism of a natural crystal—116, 1447
Lind, David A. (see Kloepper, Robert M.)—114, 240
Lind, Edward L. (see Bube, Richard H.)—115, 1159
Linder, Bruno and Ralph A. James. Cross sections for nuclear reactions involving nuclear isomers—114, 322
Lindner, C. N. (see Gartenhaus, S.)—113, 917
Lippmann, Bernard A., Marvin H. Mittleman, and Kenneth M. Watson. Scattering of electrons by neutral atoms—116, 920
Lipworth, Edgar (see Garvin, Hugh L.)—116, 393
Litherland, A. E., H. E. Gove, and A. J. Ferguson. γ rays from 1.83-Mev resonance in reaction $Mg^{24}(p,\gamma)Al^{25}$—114, 1312
—— (see Almqvist, E.)—114, 1040
—— (see Bromley, D. A.)—114, 758
—— (see Gove, H. E.)—113, 1078
—— (see Kuehner, J. A.)—114, 775
Littlejohn, C. S. Nuclear energy levels and mass of N^{17}—114, 250
—— **and G. C. Morrison.** Coulomb excitation of nuclei by Li^6 and Li^7 projectiles—116, 1526
Liu, L. (see Dalitz, R. H.)—116, 1312
Liu, S. H., D. R. Behrendt, S. Legvold, and R. H. Good, Jr. Interpretation of magnetic properties of Dy—116, 1464
Lockwood, J. A. (see Towle, L. C.)—113, 641
Loeb, Leonard B. Significance of formative time lags in gaseous breakdown—113, 7
Lohrmann, E. and M. W. Teucher. Heavy nuclei and α particles between 7 and 100 Bev/nucleon. I. Interaction mean free paths and fragmentation probabilities—115, 636
—— (see Jain, P. L.)—115, 643; 115, 654
—— (see Schein, Marcel)—116, 1238
Loinger, A. (see Bocchieri, P.)—114, 948
Lomon, E. L. Radiative corrections for nearly elastic scattering—113, 726
Long, Donald and John Myers. Hall effect and impurity levels in P-doped Si—115, 1119
—— **and John Myers.** Ionized-impurity scattering mobility of electrons in Si—115, 1107
Longini, R. L. (see Bennett, A. I.)—116, 53
Longmire, C. L., D. E. Nagle, and F. L. Ribe. Ion confinement by rotation in magnetic mirror geometry—114, 1187
Lord, J. J. (see Kalbach, R. M.)—113, 325; 113, 330
Lorents, Donald C. and E. J. Zimmerman. Stopping of low-energy H^+ and He^+ ions in plastics—113, 1199
Lorrain, Paul (see St. Pierre, Claude)—115, 999
Loscoe, Claire (see Mette, Herbert)—115, 537
Lothe, J. and J. P. Hirth. Dislocation dynamics at low temperatures—115, 543
Low, F. E. (see Chew, G. F.)—113, 1640
Low, W. and U. Rosenberger. Paramagnetic resonance of *S*-state ions in SrCl—116, 621
—— **and D. Shaltiel.** Ratios of relative abundance, magnetic moments, and capture cross sections of Gd isotopes from paramagnetic resonance spectrum—115, 424
—— (see Stahl-Brada, R.)—113, 775; 116, 561
Löwdin, Per-Olov and Lajos Redei. Combined use of methods of superposition of configurations and correlation factor on ground states of He-like ions—114, 752
Lowe, J. (see Peck, R. A., Jr.)—114, 847
Ludwig, G. W. and H. H. Woodbury. Electron spin resonance in Ni-doped Ge—113, 1014
Luttinger, J. M. (see Brown, H. A.)—115, 1778(E)
Lutzky, Morton and John S. Toll. Formation of discontinuities in classical nonlinear electrodynamics—113, 1649
Lyman, Ernest M. (see Crawford, Frank S., Jr.)—113, 1601

Lynch, F. J. and R. E. Holland. Lifetime of first excited state of K^{40}—114, 825
—— (see Holland, R. E.)—113, 903
Lynton, E. A. (see Chanin, G.)—114, 719
Lyon, W. S. and R. L. Macklin. Neuton activation at 195 kev—114, 1619

MacDowell, S. Form factors in $K_{\mu 3}$ and K_{e3} decay—116, 1047
MacDowell, S. W. Analytic properties of partial amplitudes in meson-nucleon scattering—116, 774
MacGregor, Malcolm H. Phase-shift analysis of p-p scattering experiments below 40 Mev—113, 1559
——, **Michael J. Moravscik, and Henry P. Stapp.** Modified analysis of nucleon-nucleon scattering. II. Completed analysis of p-p scattering at 310 Mev—116, 1248
—— (see Cziffra, Peter)—114, 880
Machwe, M. K., D. W. Kent, Jr., and S. C. Snowdon. Elastic scattering of 3.7-Mev neutrons from S, Fe, Co, Ni, Cu, and Zn—114, 1563
—— (see St. Pierre, Claude)—115, 999
MacKenzie, D. R. (see Ewan, G. T.)—116, 950
Macklin, R. L. (see Gibbons, J. H.)—114, 571; 114, 1319
—— (see Lyon, W. S.)—114, 1619
Madansky, L. (see Owen, George E.)—113, 1575
—— (see Shipley, E. N.)—115, 122
—— (see Tilley, D. R.)—116, 413
Mahanthappa, K. T., P. M. Mathews, and Jayaseetha Rau. Dynamics of system of spin 1 particles—115, 478
Malamud, E. Absorption of 1-Bev photons—115, 687
Malvano, R. (see Bonfiglioli, G.)—115, 330
Manacher, G. K. and L. Wolfenstein. Contribution of nucleon currents to radiative muon capture by proton—116, 782
Mandelstam, Stanley. Analytic properties of transition amplitudes in perturbation theory—115, 1741
—— Construction of perturbation series for transition amplitudes from their analyticity and unitarity properties—115, 1752
Mann, D. P., W. W. Watson, R. E. Chrien, R. L. Zimmerman, and R. B. Schwartz. Total neutron cross section of Xe and Kr—116, 1516
Mann, Lloyd G. (see West, Harry I., Jr.)—113, 881; 114, 1652(E)
Manning, G. and G. A. Bartholomew. γ-γ angular correlation measurements of thermal neutron capture γ rays in Mg, Si, P, and S—115, 401
—— (see Knowles, J. W.)—114, 1065
Manning, John R. Correlation effects in impurity diffusion—116, 819
—— Tracer diffusion in chemical concentration gradient in Ag-Cd—116, 69
Mano, Koichi (see Araki, Gentaro)—115, 1222; 116, 651
Many, A. (see Ben Sira, M. Y.)—115, 554
Maradudin, A. A. (see Domb, C.)—115, 18; 115, 24
March, P. V. (see McKee, J. S. C.)—115, 143
March, R. (see York, C.)—113, 1339
Marchand, J. (see Ittner, W. B., III)—114, 1268
Marcowitz, S. (see Crewe, A. V.)—114, 1361
Marcus, J. A. (see Yahia, J.)—113, 137
Marcus, Paul M. and Anthony J. Kennedy. Lattice specific heats near 0°K with application to Ge—114, 459
Margenau, H., P. Fontana, and L. Klein. Frequency shifts in hyperfine splitting of alkalis caused by foreign gases—115, 87
Margolis, B., S. Rosendorff, and A. Sirlin. Scattering of electrons with intrinsic electric dipole moment—116, 1530
—— (see Mossin-Kotin, C.)—116, 937
Marino, Lawrence L. (see Ewbank, W. B.)—115, 614
—— (see Petersen, F. Russell)—116, 734
Marion, Jerry B. and Jules S. Levin. Investigations of $Be^9(p,n)B^9$ and $Be^9(p,\alpha\gamma)Li^6$ reactions—115, 144
——, **J. S. Levin, and L. Cranberg.** Elastic and nonelastic neutron cross sections for Be—114, 1584
—— (see Gibbons, J. H.)—114, 1319
Marrus, R. (see Hubbs, J. C.)—114, 586
Marshak, Harvey (see Patronis, Eugene T., Jr.)—115, 1287
Marshak, R. E. (see Okubo, S.)—113, 944
Martin, Don S., Jr. (see Schupp, Fritz D.)—113, 1095
Martin, Paul C. and Julian Schwinger. Theory of many-particle systems. I—115, 1342
Martin, W. J. (see Smith, E. C.)—115, 1693
Martin, William C. Value of Rydberg constant—116, 654
Mason, Edward A. and Joseph T. Vanderslice. Mobility of H ions (H^+, H_3^+, H_5^+) in H_2—114, 497
Massalski, T. B., L. Meyer, and D. Weiner. Magnetic susceptibility of close-packed hexagonal Au-In alloys—115, 301
Mataré, H. F. (see Reed, B.)—113, 454
Mathews, Jon. Application of linear network analysis to Feynman diagrams—113, 381
Mathews, P. M. (see Mahanthappa, K. T.)—115, 478
Mathur, V. S. (see Gupta, K. K.)—115, 75
Matthews, P. T. and Abdus Salam. Relativistic theory of unstable particles. II—115, 1079
Matthias, Bernd T., Vera B. Compton, Harry Suhl, and Ernest Corenzwit. Ferromagnetic solutes in superconductors—115, 1597
—— (see Bozorth, R. M.)—115, 1595
—— (see Suhl, H.)—114, 977
Maximon, L. C. (see Olsen, Haakon)—114, 887
Maxson, D. R. (see Bennett, E. F.)—116, 131
May, R. M. Superconductivity of charged ideal 2-dimensional Bose gas—115, 254
—— **and M. R. Schafroth.** Meissner-Ochsenfeld effect in Bogoljubov theory—115, 1446
McClure, John W. (see Anderson, John D.)—115, 1010
—— (see Wong, C.)—116, 164
McCracken, K. G. Variations in cosmic-ray rigidity spectrum—113, 343
McCusker, C. B. A. Measurement of primary directions in extensive air showers—116, 177
——, **D. E. Page, and R. A. Reid.** Directional properties of extensive air shower array—116, 181
——, **D. E. Page, and R. A. Reid.** Further evidence for variation in rate of dense air showers with solar time—113, 712
McDaniel, B. D., A. Silverman, R. R. Wilson, and G. Cortellessa. Photoproduction of K^+ mesons—115, 1039
McDaniel, E. W. and M. R. C. McDowell. Low-field mobilities of negative ions in O_2, SF_6, SO_2, and HCl—114, 1028
McDiarmid, I. B. Search for 550m_e particles in sea-level cosmic radiation—115, 1016
McDonald, Frank B. Primary cosmic-ray intensity near solar maximum—116, 462
—— **and William R. Webber.** Proton component of primary cosmic radiation—115, 194
McDowell, M. R. C. (see McDaniel, E. W.)—114, 1028
McDuffie, G. E. (see Anderson, Elmer E.)—116, 624
McElhinney, J. (see Cohen, L.)—114, 590
McEwen, J. G. Nuclear interactions at energies over 1000 Bev—115, 1712
McGervey, J. and S. DeBenedetti. Chemical reactions of positronium in aqueous solutions—114, 495
McGowan, F. K. and P. H. Stelson. Coulomb excitation of states in Pt^{195}—116, 154
—— (see Smith, W. G.)—113, 1345
—— (see Stelson, P. H.)—116, 167
McGuire, A. D. (see Argo, H. V.)—114, 626
McIntyre, J. A., S. D. Baker, and T. L. Watts. Elastic scattering of O^{16} from nuclei—116, 1212
McIrvine, E. C. Quantum-mechanical approach to thermal transport phenomena in metals—115, 1537
—— **and A. W. Overhauser.** New quantum-mechanical representation—115, 1531

McKee, J. S. C., D. R. Sweetman, P. V. March, W. T. Toner, and W. M. Gibson. Scattering of 29.2-Mev He^3 nuclei by deuterons—**115**, 143
McLennan, James, Jr. Statistical mechanics of steady state—**115**, 1405
McReynolds, A. W. (see Pelah, I.)—**113**, 767
—— (see Whittemore, W. L.)—**113**, 806
McVoy, Kirk W. and U. Fano. Bremsstrahlung and photoelectric effect as inverse processes—**116**, 1168
—— (see Fano, U.)—**116**, 1147; **116**, 1159
McWeeny, R. Hartree-Fock theory with nonorthogonal basis functions—**114**, 1528
Meechan, C. J. and A. Sosin. Stored energy release in Cu following electron irradiation below 20°K—**113**, 422
Meiboom, S. (see Szöke, A.)—**113**, 585
Meinke, W. Wayne (see Gardner, Donald G.)—**114**, 822
—— (see Wahlgren, Morris A.)—**115**, 191
Meissner, Hans. Potential fluctuations in transition region to superconductivity—**113**, 1183
—— **and Richard Zdanis.** "Thin film" experiment with bulk superconductors—**113**, 1435
Melissinos, Adrian C. Determination of dipole moment and isotope shift of radioactive Hg^{197} by "double resonance"—**115**, 126
—— **and Sumner P. Davis.** Dipole and quadrupole moments of isomeric Hg^{197*} nucleus; isomeric isotope shift—**115**, 130
Melkanoff, M. A., O. R. Price, D. H. Stork, and H. K. Ticho. Optical model analysis of elastic scattering of 125-Mev K^+ mesons in nuclear emulsions—**113**, 1303
Melkonian, Edward, B. M. Rustad, and W. W. Havens, Jr. Experimental determination of nonmagnetic neutron-electron interaction—**114**, 1571
—— (see Havens, W. W., Jr.)—**116**, 1538
—— (see Safford, George J.)—**113**, 1285
Mellichamp, J. W. (see Wolff, G. A.)—**114**, 1262
Menes, M. Buildup of discharge in A—**116**, 481
—— (see Bolef, D. I.)—**114**, 1441
Merritt, F. R. (see Galt, J. K.)—**114**, 1396
Merz, W. J. (see Fatuzzo, E.)—**116**, 61
Messelt, S. (see Knecht, David J.)—**114**, 550
Mette, Herbert, Wolfgang W. Gärtner, and Claire Loscoe. Nernst and Ettinghausen effects in Ge between 300 and 700°K—**115**, 537
Metzger, Albert E. and J. M. Miller. Study of Tl, Pb, and Bi nuclei produced in bombardment of Au with 380-Mev protons—**113**, 1125
Metzger, F. R. (see Swann, C. P.)—**114**, 862
Meyer, A. Effect of lattice vibrational spectrum on intrinsic electrical and thermal resistivity of metals—**116**, 339
Meyer, L. (see Massalski, T. B.)—**115**, 301
Meyer, Peter. Primary cosmic-ray proton and α-particle intensities and their variation with time—**115**, 1734
Meyer-Berkhout, Ulrich. Inelastic scattering of 500-Mev electrons from Li^6 and Li^7—**115**, 1300
—— (see Ehrenberg, Hans F.)—**113**, 666
Meyerhof, W. E., N. W. Tanner, and C. M. Hudson. Radiative capture of protons by Be^9—**115**, 1227
—— (see Horen, D. J.)—**113**, 875
Meyer-Schützmeister, Luise (see Hanna, S. S.)—**115**, 986
Mielczarek, Eugenie V. and H. P. R. Frederikse. Thermal conductivity of InSb at low temperatures—**115**, 888
Mihailovič, M. V., G. Pregl, G. Kernel, and M. Kreger. Total photonuclear absorption in Al—**114**, 1621
Mihelich, J. W. (see Bichard, J. W.)—**116**, 720
—— (see Harmatz, B.)—**114**, 1082
Miller, Arthur. Resolution of ambiguity of valence states in spinels containing Mn and Fe spinels—**116**, 1481
Miller, Donald (see Horwitz, Nahmin)—**115**, 472
Miller, G. H. (see Utterback, N. G.)—**116**, 976
Miller, J. M. (see Hunter, E. T.)—**115**, 1053
—— (see Metzger, Albert E.)—**113**, 1125
Miller, Peter B. Penetration depth in impure superconductors—**113**, 1209
Miller, Philip D. and G. C. Phillips. Scattering of protons from He and level parameters in Li^5—**115**, 1778(E)
—— (see Phillips, G. C.)—**115**, 1268
Miller, Robert C. and Albert Savage. Further experiments on sidewise motion of 180° domain walls in $BaTiO_3$—**115**, 1176
Mills, R. L. (see Cooper, L. N.)—**114**, 1377
—— (see Day, R. B.)—**114**, 209
Mims, W. B. (see Bowers, K. D.)—**115**, 285
Mirri, Anna M. (see Favero, Paolo G.)—**114**, 1534
Misner, Charles W. and Peter Putnam. Active gravitational mass—**116**, 1045
—— (see Arnowitt, R.)—**116**, 1322
Mitchell, Allan C. G., Jose O. Juliano, Charles B. Creager, and C. W. Kocher. Disintegration of I^{124} and I^{123}—**113**, 628
—— (see Juliano, Jose O.)—**113**, 602
Mito, I. (see Aizu, H.)—**116**, 436
Mittleman, Marvin H. and Kenneth M. Watson. Scattering of charged particles by neutral atoms—**113**, 198
—— (see Lippmann, Bernard A.)—**116**, 920
Miyoshi, Yasunori. Theoretical analysis of buildup of current in transient Townsend discharge—**116**, 1620(E)
Moe, David E. and Otto H. Petsch. Energy spectrum of electrons emitted from gases bombarded by positive ions—**115**, 349
Moler, R. B. (see Scobie, J.)—**116**, 657
Molmud, P. Langevin equation and ac conductivity of non-Maxwellian plasmas—**114**, 29
Montroll, E. W. (see Domb, C.)—**115**, 18; **115**, 24
Mooring, F. P. (see Lee, L. L., Jr.)—**115**, 969
Moravcsik, Michael J. Coulomb effects in boson emission—**114**, 621
—— (see Cziffra, Peter)—**114**, 880; **116**, 226
—— (see MacGregor, Malcolm H.)—**116**, 1248
—— (see Taylor, John G.)—**113**, 689
Mori, Hazime. Correlation function method for transport phenomena—**115**, 298
Morinaga, H., N. Mutsuro, and Masumi Sugawara. Lower excited states of Ca^{42}—**114**, 1146
Morita, Masato. Formulas of allowed β decay—**114**, 1080
—— Higher order corrections to allowed β decay—**113**, 1584
Morpurgo, G. γ transitions between corresponding states in mirror nuclei—**114**, 1075
Morrison, David L. and Norbert T. Porile. Absence of isomerism in Ga^{65}—**113**, 289
—— (see Porile, Norbert T.)—**116**, 1193
Morrison, G. C. and J. A. Galey. Excited states of B^{12}—**116**, 1583
—— (see Littlejohn, C. S.)—**116**, 1526
Morrison, J. A. (see Barron, T. H. K.)—**115**, 1439
Morrison, S. Roy. Slow capture of holes and electrons by surface states on Ge and Si at low temperatures—**114**, 437
Moses, H. A. (see Jones, P. R.)—**113**, 182
Moses, H. E. Solution of Maxwell's equations in terms of spinor notation: direct and inverse problem—**113**, 1670
Mossin-Kotin, C., B. Margolis, and E. S. Troubetzkoy. Calculations of neutron capture cross sections—**116**, 937
Moulton, W. G. (see Hasty, T. E.)—**116**, 1459
Mower, Lyman. Conductivity of warm plasma—**116**, 16
Moyer, Burton J. (see Osher, John E.)—**114**, 612
Mozer, Bernard (see Baranger, Michel)—**115**, 521
Mozer, Forrest S. Generalized atomic mass law—**116**, 970
Müller, Erwin W. (see Young, Russel D.)—**113**, 115
Mulliken, R. S. Electron affinity of O_2—**115**, 1225
Mullins, W. W. Analysis of linear cooperative problem as Markoff process—**114**, 389
Murray, Joseph (see Horwitz, Nahmin)—**115**, 472

Murray, R. B. and H. W. Schmitt. Cross section for $Li^6(n,\alpha)H^3$ reaction for $1.2 \leq E_n \leq 8.0$ Mev—**115**, 1707
—— (see Schmitt, H. W.)—**116**, 1575
Mutsuro, N. (see Morinaga, H.)—**114**, 1146
Myers, John (see Long, Donald)—**115**, 1107; **115**, 1119

Nagle, D. E. (see Longmire, C. L.)—**114**, 1187
Nainan, T. D. (see Juliano, Jose O.)—**113**, 602
Nakada, M. P. (see Anderson, John D.)—**115**, 1010
—— (see Wong, C.)—**116**, 164
Nardone, Maria C. (see Breene, R. G., Jr.)—**115**, 93
Natali, S. (see Camerini, U.)—**115**, 1048
Nathans, Robert (see Pickart, Stanley J.)—**116**, 317
Need, John L. (see Snell, Arthur H.)—**116**, 1548
Neighbor, J. E. (see Horen, D. J.)—**113**, 875
Nelson, Donald F. and R. W. Pidd. Measurement of Mott asymmetry in double scattering of electrons—**114**, 728
—— (see Sherman, Noah)—**114**, 1541
Nethercot, Arthur H., Jr. (see Johnson, Fred M.)—**114**, 705
—— (see Kaplan, R.)—**116**, 270
Neufeld, Jacob. Occurrence of Vavilov-Čerenkov radiation in high-temperature plasma—**116**, 1
—— Propagation of electromagnetic waves in multistream medium at gyromagnetic resonance—**116**, 19; **116**, 1620(E)
—— Radiation produced by electron beam passing through dielectric medium—**116**, 785
Neugebauer, C. A. Saturation magnetization of Ni films of thickness less than 100 A—**116**, 1441
Neumark, Gertrude. Efficiency of electroluminescence in ZnS—**116**, 1425
Neuringer, L. J. Effect of pressure on infrared absorption of semiconductors—**113**, 1495
Newby, Neal, Jr., and E. J. Konopinski. Nuclear states in RaE β decay—**115**, 434
Newhouse, V. L. (see Bremer, J. W.)—**116**, 309
Newman, E. and J. N. Goldberg. Measurement of distance in general relativity—**114**, 1391
Newman, Ezra T. and Allen I. Janis. Rigid frames in relativity—**116**, 1610
Newman, R. and R. M. Chrenko. Effects of MnO and CoO on 0.24-ev NiO absorption line—**115**, 882
—— **and R. M. Chrenko.** Infrared absorption from L·S splittings in Co^{2+} salts—**115**, 1147
—— **and R. M. Chrenko.** Optical properties of NiO—**114**, 1507
Newton, J. O. (see Gallagher, C. J., Jr.)—**113**, 1298
Newton, Roger G. Threshold properties of scattering and reaction cross sections—**114**, 1611
Ney, E. P. (see Freier, P. S.)—**113**, 921; **114**, 365
Nicholson, W. J. and I. Halpern. Direct-interaction effects in medium-energy fission of U—**116**, 175
Nielsen, O. B. (see Bjørnholm, S.)—**115**, 1613
—— (see Toth, Kenneth S.)—**115**, 1004; **116**, 118
Nierenberg, William A. (see Ewbank, W. B.)—**115**, 614
—— (see Garvin, Hugh L.)—**116**, 393
Nigam, B. P., M. K. Sundaresan, and Ta-You Wu. Theory of multiple scattering: second Born approximation and correction to Molière's work—**115**, 491
Nishimura, J. (see Aizu, H.)—**116**, 436
Nobles, R. G. (see Smith, A. B.)—**115**, 1242
Noll, Walter (see Coleman, Bernard D.)—**115**, 262
Norbeck, E., J. M. Blair, L. Pinsonneault, and R. J. Gerbracht. Angular distribution of Li^8 from $Be^9(Li^7,Li^8)Be^8$—**116**, 1560
Northcliffe, L. C. (see Knecht, David J.)—**114**, 550
Northrop, John A., Richard H. Stokes, and Keith Boyer. Measurement of fission thresholds of Pu^{239}, U^{233}, U^{235}, and U^{238} using (d,p) reaction—**115**, 1277
Norton, R. E. and W. K. R. Watson. Commutation rules and spurious eigenstates in soluble field theories—**116**, 1597
Nozières, P. and D. Pines. Electron interaction in solids. Characteristic energy loss spectrum—**113**, 1254

O'Connell, J., P. Dyal, and J. Goldemberg. $(\gamma,2n)$ reactions in light elements—**116**, 173
Oehme, Reinhard and John G. Taylor. Proof of dispersion relations for production of pions by real and virtual photons and for related processes—**113**, 371
Ofer, Shimon. Decay of Pm^{143} and Pm^{144}—**113**, 895
—— Decay of Tb^{158} (5-day)—**115**, 412
—— Illustration of dependence of sign of δ of mixed γ-ray transition on its order in cascade—**114**, 870
—— **and A. Schwarzschild.** Nuclear resonance fluorescence in Ce^{140}—**116**, 725
—— (see Elwyn, A.)—**116**, 1490
Oguchi, T. (see Keffer, F.)—**115**, 1428; **115**, 1553
Ohta, Masao (see Araki, Gentaro)—**115**, 1222; **116**, 651
Okamoto, K. Effect of nuclear forces on cross sections of photonuclear reactions—**116**, 428
Okaya, Y. (see Hoshino, S.)—**115**, 323
O'Kelley, G. D. (see Johnson, Noah R.)—**114**, 279
Okhuysen, P. L. and J. T. Prud'homme. Compound elastic scattering of 4.2-Mev neutrons in Pb—**116**, 986
Okubo, S., R. E. Marshak, and E. C. G. Sudarshan. *V-A* theory and decay of Λ hyperon—**113**, 944
—— (see Teutsch, W. B.)—**114**, 1148
Oliphint, Clark. Calculation of specific heat of some alkali halides—**115**, 296
Olness, J. W. (see Vorona, J.)—**116**, 1563
Olsen, Haakon and L. C. Maximon. Photon and electron polarization in high-energy bremsstrahlung and pair production with screening—**114**, 887
Oneda, S. and Y. Tanikawa. Consequences of renormalizable weak interactions—**113**, 1354
O'Neill, G. K. and E. J. Woods. Intersecting beam systems with storage rings—**115**, 659
Orbach, R. Antiferromagnetic magnon dispersion law and Bloch wall energies in ferromagnets and antiferromagnets—**115**, 1181
—— Spin wave spectra for canted antiferromagnets and ferromagnets—**115**, 1189
—— **and P. Pincus.** Excitation of spin waves in antiferromagnet by uniform rf field—**113**, 1213
Orear, J. (see Bierman, E.)—**113**, 710
—— (see Taylor, S.)—**114**, 359
Osgood, C. F. (see Ajzenberg-Selove, F.)—**116**, 1521
Osher, John E., Burton J. Moyer, and Sherwood I. Parker. Study of θ_1^0 production and decay by observation of its neutral decay mode—**114**, 612
Oster, Ludwig. Spectral and angular distribution of cyclotron radiation emitted by colliding particles—**116**, 474
O'Sullivan, W. (see Keffer, F.)—**115**, 1553
Ovenshine, S. J. (see Sherwood, J. E.)—**114**, 858
Overhauser, A. W. (see McIrvine, E. C.)—**115**, 1531
Overseth, O. E., Jr., and R. A. Peck, Jr. Angular distributions of proton groups from $Al^{27}(n,p)Mg^{27}$ reaction at 14 Mev—**115**, 993
Overton, W. C., Jr. Solutions of secular determinant on Brillouin zone faces for fcc lattice vibrations—**116**, 851
Owen, George E., L. Madansky, and Steve Edwards, Jr. Analysis of reaction $C^{13}(He^4,\alpha)C^{12}$—**113**, 1575
—— (see Shipley, E. N.)—**115**, 122
Ozaki, Seinosuke (see Roe, Byron P.)—**116**, 1022

Page, D. E. (see McCusker, C. B. A.)—**113**, 712; **116**, 181
Pais, A. and R. Serber. General transformation of symmetrical pseudoscalar theory—**113**, 955
—— **and G. E. Uhlenbeck.** On quantum theory of third virial coefficient—**116**, 250
Palevsky, H. (see Ghose, A.)—**113**, 49

Palmieri, J. N. (see Cormack, A. M.)—**115**, 599
Panofsky, W. K. H. (see Lazarus, Alan J.)—**113**, 1330
Parker, G. W. (see Smith, E. C.)—**115**, 1693
Parker, Sherwood I. (see Osher, John E.)—**114**, 612
Parmenter, R. H. Acoustoelectric effect—**113**, 102
—— High-current superconductivity—**116**, 1390
Parnell, Darrell R. (see Katz, Robert)—**116**, 236
Passell, Thomas O. (see Rubin, Sylvan)—**114**, 1110
Patronis, Eugene, T., Jr., and Harvey Marshak. Low-energy capture γ rays of Eu^{152} and Eu^{154}—**115**, 1287
—— (see Domanic, Fahri)—**114**, 1577
Patterson, H. Wade (see Hess, Wilmot N.)—**116**, 445
Pawlicki, G. S. (see Smith, E. C.)—**115**, 1693
Peck, R. A., Jr., and J. Lowe. Gross structure in (d,p) reactions near $Z=50$—**114**, 847
—— (see Overseth, O. E., Jr.)—**115**, 993
Pekeris, C. L. $1\,^1S$ and $2\,^3S$ states of He—**115**, 1216
Pelah, I., W. L. Whittemore, and A. W. McReynolds. Energy distribution of neutrons scattered by liquid Pb—**113**, 767
—— (see Ghose, A.)—**113**, 49
Penfold, A. S. and E. L. Garwin. γ rays from nuclear photoeffect in C, O, and Cu—**116**, 120
—— **and E. L. Garwin.** Nuclear photon absorption in C and O—**114**, 1324
—— **and E. L. Garwin.** Photonuclear cross sections for A^{40}—**114**, 1139
—— **and E. L. Garwin.** Photonuclear reaction energies—**115**, 420
—— **and J. E. Leiss.** Analysis of photonuclear cross sections—**114**, 1332
Penner, S. and J. E. Leiss. Photoproton cross sections of C—**114**, 1101
Pepinsky, R. and K. Vedam. $LiH_3(SeO_3)_2$: new room-temperature ferroelectric—**114**, 1217
—— (see Hoshino, S.)—**115**, 323
Peres, Asher and Nathan Rosen. Nonlinear effects of gravitational radiation—**115**, 1085
Perez-Mendez, Victor (see Knapp, Edward A.)—**114**, 605
Perlman, I. (see Stephens, F. S.)—**113**, 212
Perlman, M. L. (see Harmer, D. S.)—**114**, 1133
Perlmutter, A. (see Barcus, L. C.)—**115**, 1778(E)
Perlow, Gilbert J. and Andrew F. Stehney. Halogen delayed-neutron activities—**113**, 1269
Perry, J. E., Jr. (see Day, R. B.)—**114**, 209
Pershan, P. S. (see Bloembergen, N.)—**114**, 445
Peter, Martin. Millimeter-wave paramagnetic resonance spectrum of ^6S state impurity (Fe^{+++}) in $MgWO_4$—**113**, 801
—— Paramagnetic resonance and crystal field in two Ni-chelate crystals—**116**, 1432
—— (see Hensel, J. C.)—**114**, 411
Petersen, F. Russell, Vernon J. Ehlers, W. Bruce Ewbank, Lawrence L. Marino, and Howard A. Shugart. Nuclear spin, hfs separation, and magnetic moment of 22-hr K^{43}—**116**, 734
Petsch, Otto H. (see Moe, David E.)—**115**, 349
Pettit, George D. (see Keller, Seymour P.)—**113**, 785; **115**, 526
Phelps, A. V. Diffusion, de-excitation, and three-body collision coefficients for excited Ne atoms—**114**, 1011
Philipp, H. R. and E. A. Taft. Optical constants of Ge in region 1 to 10 ev—**113**, 1002
—— (see Taft, E. A.)—**113**, 1561; **115**, 1583
Phillips, G. C. and P. D. Miller. Measurement of spin polarization by nuclear scattering—**115**, 1268
—— (see Miller, Philip D.)—**115**, 1779(E)
—— (see Young, T. E.)—**116**, 962
Phillips, James C. Vibration spectra and specific heats of diamond-type lattices—**113**, 147
—— **and Leonard Kleinman.** New method for calculating wave functions in crystals and molecules—**116**, 287
—— (see Kleinman, Leonard)—**116**, 880
Phillips, Norman E. Heat capacity of Al between 0.1°K and 4.0°K—**114**, 676
Phillips, W. E. (see Achor, W. T.)—**114**, 137
Pickart, Stanley J. and Robert Nathans. Neutron study of crystal and magnetic structures of $MnFe_{2-t}Cr_tO_4$—**116**, 317
Picus, G. S. (see Burstein, E.)—**113**, 15
Pidd, R. W. (see Nelson, D. F.)—**114**, 728
Pierce, C. B. and D. Lazarus. Diffusion of Ru in single crystals of Ag—**114**, 686
Pinajian, J. J. and M. L. Halbert. N-induced nuclear reactions in K—**113**, 589
Pincus, P. Temperature dependence of anisotropy energy in antiferromagnets—**113**, 769
—— (see Orbach, R.)—**113**, 1213
Pines, D. (see Hugenholtz, N. M.)—**116**, 489
—— (see Nozières, P.)—**113**, 1254
Pinkston, William T. Shell model theory of inelastic scattering on Be^9—**115**, 963
Pinsonneault, L. (see Norbeck, E.)—**116**, 1560
Pipkin, Francis M. (see Anderson, L. Wilmer)—**116**, 87
Platzman, P. M. (see Iddings, C. K.)—**113**, 192; **115**, 919
Pleasonton, F. (see Snell, Arthur H.)—**116**, 1548
Plendl, H. S. and F. E. Steigert. Low-lying energy levels in Sc^{41}—**116**, 1534
Pondrom, Lee G. Positive pion production in p-p collisions at 450 Mev—**114**, 1623
—— (see Crewe, A. V.)—**114**, 1361
Porile, Norbert T. Excitation functions for α-induced reactions on Zn^{64}—**115**, 939; **116**, 1620(E)
—— **and David L. Morrison.** Reactions of Cu^{63} and Cu^{65} with α particles—**116**, 1193
—— (see Morrison, David L.)—**113**, 289
Porter, Fred T. β decay energy of T—**115**, 450
—— **and Paul P. Day.** $0-$ to $0+$ β transition $Pr^{144} \rightarrow Nd^{144}$—**114**, 1286
Portis, A. M. and Dale Teaney. Microwave Faraday rotation in antiferromagnetic MnF_2—**116**, 838
—— (see de Gennes, P.-G.)—**116**, 323
Portnoy, William M. (see Handler, Paul)—**116**, 516
Poularikas, A. and R. W. Fink. Absolute activation cross sections for reactions of Bi, Cu, Ti, and Al with 14.8-Mev neutrons—**115**, 989
Povh, B. Energy levels of B^9 and O^{15}—**114**, 1114
—— **and D. F. Hebbard.** Angular correlation measurements in O^{18}—**115**, 608
Powell, C. J. and J. B. Swan. Origin of characteristic electron energy losses in Al—**115**, 869
—— **and J. B. Swan.** Origin of characteristic electron energy losses in Mg—**116**, 81
Powell, John M. (see Kurnick, S. W.)—**116**, 597
Powell, Robert L., Hans M. Roder, and William J. Hall. Low-temperature transport properties of Cu and its dilute alloys: pure Cu, annealed and cold-drawn—**115**, 314
Powell, Wilson M. (see Fowler, William B.)—**113**, 928
Prats, Francisco and John S. Toll. Construction of Dirac equation central potential from phase shifts and bound states—**113**, 363
Pratt, B. (see Ben Sira, M. Y.)—**115**, 554
Pratt, G. W., Jr., and Roland Coelho. Optical absorption of CoO and MnO above Néel temperature—**116**, 281
Pratt, William W. and Robert G. Cochran. Search for low-energy γ rays in O^{16}—**116**, 1578
—— (see Cochran, R. G.)—**113**, 852
Pregl, G. (see Mihailović, M. V.)—**114**, 1621
Prentki, J. (see d'Espagnat, B.)—**114**, 1366
Present, R. D. (see Foland, W. D.)—**113**, 613
Preskitt, C. A. and W. P. Alford. Elastic scattering of protons by V, Cr, Fe, and Co—**115**, 389
Price, O. R. (see Melkanoff, M. A.)—**113**, 1303
Proctor, T. M. X-ray induced electrical polarization in glass—**116**, 1436
Prosser, F. W., Jr. (see Bonner, T. W.)—**115**, 398
Prud'homme, J. T. (see Okhuysen, P. L.)—**116**, 986

Pugh, E. W. (see Ryan, F. M.)—**116**, 1106
Putnam, Peter (see Misner, Charles W.)—**116**, 1045

Quinton, A. R., C. E. Anderson, and W. J. Knox. Fluorescent response of CsI crystals to heavy ions—**115**, 886

Rabin, Herbert. X-ray expansion and coloration of undoped and impurity-doped NaCl crystals—**116**, 1381
Radford, H. E. and V. W. Hughes. Microwave Zeeman spectrum of atomic O—**114**, 1274
Rainwater, L. J. (see Havens, W. W., Jr.)—**116**, 1538
Ramler, W. J., J. Wing, D. J. Henderson, and J. R. Huizenga. Excitation functions of Bi and Pb—**114**, 154
—— (see Wing, J.)—**114**, 163
Ramsey, N. F. (see Cormack, A. M.)—**115**, 599
Rao, D. A. A. S. N. (see Young, T. E.)—**116**, 962
Rapaport, J. and J. J. van Loef. Excitation function of reaction $Zn^{64}(n,p)Cu^{64}$ with neutrons of energies between 2 and 3.6 Mev—**114**, 565
Rasmussen, John O. α-decay barrier penetrabilities with exponential nuclear potential: Even-even nuclei—**113**, 1593
—— α-decay barrier penetrabilities with exponential nuclear potential: odd-mass nuclei—**115**, 1675
—— (see Chasman, R. R.)—**115**, 1257
—— (see Toth, Kenneth S.)—**115**, 150; **115**, 158
—— (see Unik, John P.)—**115**, 1687
Rasmussen, V. K. (see Swann, C. P.)—**114**, 862
Ratti, S. (see Conversi, M.)—**114**, 1150
Rau, Jayaseetha (see Mahanthappa, K. T.)—**115**, 478
Ravenhall, D. G. (see Ehrenberg, Hans F.)—**113**, 666
Rayburn, L. A. Differential elastic scattering of 14-Mev neutrons by Zn, Sn, Sb, Pb, and Bi—**116**, 1571
Rayne, J. A. Elastic constants of α brasses: variation with solute concentration from 4.2–300°K—**115**, 63
—— (see Biondi, M. A.)—**115**, 1522
Raz, B. James. Collective and interparticle interactions in even-even nuclei—**114**, 1116
Redei, Lajos (see Löwdin, Per-Olov)—**114**, 752
Redfield, Alfred G. Spatial diffusion of spin energy—**116**, 315
—— (see Anderson, A. G.)—**116**, 583
Redington, R. W. Gain-bandwidth product of photoconductors—**115**, 894
Reed, B., O. A. Weinreich, and H. F. Mataré. Conductivity of grain boundaries in grown Ge bicrystals—**115**, 454
Reeves, H. and E. E. Salpeter. Nuclear reactions in stars. IV. Buildup from C—**116**, 1505
Regier, R. B., W. H. Burgus, and R. L. Tromp. Ratio of asymmetric to symmetric fission of U^{233} as function of neutron energy—**113**, 1589
Rehfuss, D. E. and Bernd Crasemann. L to K electron capture ratio in Ge^{71}—**114**, 1609
Reich, H. A. (see Garwin, R. L.)—**115**, 1478
Reid, R. A. (see McCusker, C. B. A.)—**113**, 712; **116**, 181
Reiffel, L. Pressure effects in luminescence: isobaric experiments on NaI(Tl)—**114**, 1493
Reiner, A. S. (see Bayman, B. F.)—**115**, 1627
Reines, Frederick and Clyde L. Cowan, Jr. Free antineutrino absorption cross section. I. Measurement of free antineutrino absorption cross section by protons—**113**, 273
—— (see Carter, R. E.)—**113**, 280
Reingold, Ida H. (see Berger, Martin J.)—**113**, 857
Reiss, Howard. Influence of solutes on self-diffusion in fcc lattice—**113**, 1445
Reneker, Darrell H. Ultrasonic attenuation in Bi at low temperatures—**115**, 303
Renton, C. A. (see Gibbons, D. F.)—**114**, 1257
Rhoderick, E. H. (see Broom, R. F.)—**116**, 344
Riazuddin. Charge radius of pion—**114**, 1184
Ribe, F. L. (see Longmire, C. L.)—**114**, 1187
Richardson, J. Reginald (see Boom, R. W.)—**115**, 1700
—— (see Burkig, Jack W.)—**113**, 290
Rickayzen, G. Collective excitations in theory of superconductivity—**115**, 795
—— (see Bardeen, J.)—**113**, 982
Ries, Richard R. (see Benson, Jay L.)—**113**, 1105
Rightmire, Robert A., James R. Simanton, and Truman P. Kohman. Disintegration scheme of long-lived Al^{26}—**113**, 1069
Ritchie, R. H. Interaction of charged particles with degenerate Fermi-Dirac electron gas—**114**, 644
Ritson, D. M. (see Fazio, G. G.)—**116**, 1267
Roberts, J. H. (see Smith, A. B.)—**114**, 1351
Roberts, S. Optical properties of Ni and W and their interpretation according to Drude's formula—**114**, 104
Roberts, Thomas R. (see Laquer, Henry L.)—**113**, 417
Rockmore, Ronald M. Effects of particle-particle interaction on moment of inertia of many-fermion systems—**116**, 469
—— Pion-deuteron scattering in impulse approximation—**113**, 1696(E)
—— Single-particle energies in degenerate electron gas at high density—**114**, 941
—— **and John G. Taylor.** Internal pairs in capture of π^- by protons—**113**, 1697(E)
—— (see Sawada, K.)—**116**, 1618
Rodberg, Leonard S. (see Karplus, Robert)—**115**, 1058
Roder, Hans M. (see Powell, Robert L.)—**115**, 314
Rodriquez, Sergio. Electrodynamics of charge carriers of negative effective mass in crystals—**115**, 821
—— Linear antiferromagnetic chain—**116**, 1474
Roe, Byron P. and Seinosuke Ozaki. Direct pair production by muons—**116**, 1022
Roellig, L. O. and D. A. Glaser. Elastic π^+-p and p-p scattering at 1.23 Bev/c—**116**, 1001
Rojansky, V. Q-number modification of Lorentz rotations—**114**, 634
Romanowski, T. A. and V. H. Voelker. Photoneutron cross sections of Li^6 and Li^7—**113**, 886
Romer, R. H. Nuclear spin relaxation in liquid He^3—**115**, 1415
Roof, R. B., Jr. X-ray absorption coefficients of elements with $Z=1$ to 17 for Mo $K\alpha$ radiation—**113**, 826
—— X-ray absorption coefficients of Th, U, and Pu—experimental determination and theoretical interpretation—**113**, 820
Rose, A. and M. A. Lampert. Photoconductor performance, space-charge currents, and steady-state Fermi level—**113**, 1227
—— (see Lampert, M. A.)—**113**, 1236
Rose, H. J. (see Warburton, E. K.)—**114**, 214
Rosen, Gerald. Geometrical significance of Einstein-Maxwell equations—**114**, 1179
Rosen, J. L. (see Havens, W. W., Jr.)—**116**, 1538
Rosen, Nathan (see Peres, Asher)—**115**, 1085
Rosenbaum, B. (see Atkins, K. R.)—**113**, 751
Rosenberg, Leonard (see Spruch, Larry)—**116**, 1034
Rosenberger, U. (see Low, W.)—**116**, 621
Rosendorff, S. (see Bierman, E.)—**113**, 710
—— (see Margolis, B.)—**114**, 1530
Rosenzweig, Walter. Binding effect corrections in energy-loss distribution functions for charged particles passing through thin absorbers—**115**, 1683
Ross, Marc H. and Gordon L. Shaw. Test of global symmetry in K^--p reactions—**115**, 1773
—— (see Kotani, Tsuneyuki)—**113**, 622
Roth, Laura M., Benjamin Lax, and Solomon Zwerdling. Theory of optical magneto-absorption effects in semiconductors—**114**, 90
—— (see Zwerdling, Solomon)—**114**, 80
Roy, D. K. (see Das, T. P.)—**113**, 1696(E)
Roy, S. K. Ghosh (see Das, T. P.)—**113**, 1696(E)
Royden, Herbert N. and Byron T. Wright. Small-angle p-p scattering at 20 Mev—**113**, 294
Rubbia, C. (see Conversi, M.)—**114**, 1150

Rubin, Allen G. (see Cohen, Bernard L.)—**113**, 579; **114**, 1143
Rubin, Sylvan, L. Evan Bailey, and Thomas O. Passell. Proton elastic scattering cross sections of Si, Cl, K, Sc, Ti, and Mn—**114**, 1110
Rupprecht, G. and C. A. Klein. Energy levels in neutron-irradiated *n*-type Si—**116**, 342
Russek, A. and M. Tom Thomas. Ionization produced by atomic collisions at kev energies. II—**114**, 1538
—— (see Ziemba, F. P.)—**115**, 922
Rustad, B. M. (see Kistner, O. C.)—**114**, 1329
—— (see Melkonian, E.)—**114**, 1571
Rustgi, M. L. (see Breit, G.)—**114**, 830
—— (see Zernik, W.)—**114**, 1358
Ryan, F. M., E. W. Pugh, and R. Smoluchowski. Superparamagnetism, nonrandomness, and irradiation effects in Cu-Ni alloys—**116**, 1106
Ryason, P. R. Proposed direct test of uncertainty principle—**115**, 784

Sachs, A. M. (see Koller, E. L.)—**116**, 760
Safford, George J. and Edward Melkonian. Determination of absolute neutron fission cross section of U^{235} by measurement of α—**113**, 1285
Sagane, Ryokichi (see Dudziak, Walter F.)—**114**, 336
Sakita, B. $K_{\mu 2}$ decay and leptonic decay of hyperons—**114**, 1650
Sakurai, J. J. Symmetry laws and strong interactions—**113**, 1679
—— Useful symmetries of strong interactions—**115**, 1304
—— Ξ^--Ξ^0 mass differences—**114**, 1152
Salam, Abdus (see Matthews, P. T.)—**115**, 1079
Salpeter, E. E. (see Krall, Nicholas A.)—**115**, 457
—— (see Reeves, H.)—**116**, 1505
Salzman, George (see Schnitzer, Howard J.)—**113**, 1153
Sanders, T. M., Jr. (see Weinreich, Gabriel)—**114**, 33
Sands, Matthew (see Bloch, Michel)—**113**, 305
Sato, Hiroshi and Anthony Arrott. Transitions from ferromagnetism to antiferromagnetism in Fe-Al alloys: theoretical interpretation—**114**, 1427
—— (see Arrott, Anthony)—**114**, 1420
Saum, George A. and Eugene B. Hensley. Fundamental optical absorption in IIA-VIB compounds—**113**, 1019
Savage, Albert (see Miller, Robert C.)—**115**, 1176
Sawada, Katsuro. Ground-state energy of Bose-Einstein gas with repulsive interaction—**116**, 1344
—— **and R. M. Rockmore.** Stability of nuclear matter—**116**, 1618
Sawada, S. and G. C. Danielson. Domain structure of WO_3 single crystals—**113**, 1005
—— **and G. C. Danielson.** Electrical conduction in crystals and ceramics of WO_3—**113**, 803
—— **and G. C. Danielson.** Optical indices of refraction of WO_3—**113**, 1008
Sawyer, R. F. Decay of charged pion—**116**, 231
Scarf, F. L. Anticommutator for nonlinear field theory—**115**, 463
Schaeffer, Oliver A. and Josef Zähringer. High sensitivity mass spectrometric measurement of stable He and A isotopes produced by high-energy protons in Fe—**113**, 674
Schafroth, M. R. (see May, R. M.)—**115**, 1446
Schawlow, A. L. and G. E. Devlin. Effect of energy gap on penetration depth of superconductors—**113**, 120
——, **G. E. Devlin, and J. K. Hulm.** Intermediate state of hard superconductors—**116**, 626
Schein, Marcel, D. M. Haskin, E. Lohrmann, and M. W. Teucher. Multiple meson production in nucleon-nucleon interactions at energies of 10^{12} ev—**116**, 1238
—— (see Aizu, H.)—**116**, 436
Scherb, F. (see Day, R. B.)—**114**, 209
Schey, H. M. Scattering of neutrons by nonspherical nuclei—**113**, 900
Schiffer, J. P. and L. L. Lee, Jr. Angular distributions of protons from (d,p) reaction with deuteron energies below Coulomb barrier—**115**, 1705
——, **L. L. Lee, Jr., and B. Zeidman.** Single-particle states of neutron from gross structure in proton spectra of (d,p) reactions—**115**, 427
—— (see Lee, L. L., Jr.)—**115**, 160
Schlesinger, M. (see Halperin, A.)—**113**, 762
Schlömann, Ernst. Fine structure in decline of ferromagnetic resonance absorption with increasing power level—**116**, 828
Schmid, L. C. and S. B. Burson. Decay of $_{60}Nd^{151}$ (12 min)—**115**, 178
—— **and S. B. Burson.** Decay of $_{62}Sm^{155}$ (23.5 min)—**115**, 447
——, **S. B. Burson, and J. M. Cork.** Decay of $_{64}Gd^{161}$ (3.73 min)—**115**, 174
—— (see Burson, S. B.)—**115**, 188
Schmidt, F. H. (see Gerhart, J. B.)—**114**, 1095
Schmitt, H. W. and R. B. Murray. Neutron-induced fission cross section of Np^{237}—**116**, 1575
—— (see Gibbons, J. H.)—**114**, 1319
—— (see Murray, R. B.)—**115**, 1707
Schmitt, R. W. (see Jacobs, I. S.)—**113**, 459
Schneider, Jürgen and F. W. Hofmann. Absorption and dispersion of microwaves in flames—**116**, 244
Schnitzer, Howard J. and George Salzman. Alternative method for comparing pion-proton scattering data with dispersion equations—**113**, 1153
Schrank, Glen E. (see Burkig, Jack W.)—**113**, 290
Schremp, E. J. *G*-conjugation and group-space of proper Lorentz group—**113**, 936
Schroeder, P. A. (see Goode, D. H.)—**115**, 1426
Schultz, Sheldon (see Lichten, William)—**116**, 1132
Schultz, T. D. Slow electrons in polar crystals: self-energy, mass, and mobility—**116**, 526
Schulz, G. J. Formation of H^- ions by electron impact on H_2—**113**, 816
—— Measurement of excitation of N_2, CO, and He by electron impact—**116**, 1141
Schuman, R. P., E. H. Turk, and R. L. Heath. Decay of short-lived Ba and La fission products—**115**, 185
Schupp, Fritz D., Clifford B. Colvin, and Don S. Martin, Jr. Photonuclear reactions of Ga and As with 70-Mev bremsstrahlung—**113**, 1095
Schwartz, R. B. (see Mann, D. P.)—**116**, 1516
Schwarzschild, A. (see Benczer-Koller, N.)—**115**, 108
—— (see Ofer, S.)—**116**, 725
Schwed, Philip (see Fulton, Thomas)—**115**, 973
Schwinger, Julian. Euclidean quantum electrodynamics—**115**, 721
—— (see Martin, Paul C.)—**115**, 1342
Scobie, J., R. B. Moler, and R. W. Fink. Measurement of L/K-capture ratio in Fe^{55} decay—**116**, 657
Scofield, James H. Scattering of polarized electrons by polarized nucleons—**113**, 1599
Scott, S. A. (see Taylor, H. W.)—**114**, 121
Seaborg, Glenn T. (see Foreman, Bruce M., Jr.)—**116**, 382
Seaton, M. J. Electron impact ionization of Ne, O, and N—**113**, 814
Seeger, Karlheinz. Microwave field dependence of drift mobility in Ge—**114**, 476
Segel, R. E. Neutron-capture γ rays in Cl^{36}—**113**, 844
—— (see Kienle, Paul)—**113**, 909; **114**, 1554
Segrè, Emilio (see Chamberlain, Owen)—**113**, 1615
Seidel, G. (see Keesom, P. H.)—**113**, 33
Seki, H. (see Atkins, K. R.)—**113**, 751
Sekido, Y., S. Yoshida, and Y. Kamiya. Point source of cosmic rays in Orion—**113**, 1108
Sellen, J. M., G. Cocconi, V. T. Cocconi, and E. L. Hart. Multiple meson production by photons in H—**113**, 1323
—— (see Hart, E. L.)—**115**, 678

Sengupta, S. and S. Ghosh. Energy levels in a bounded isotropic harmonic oscillator potential and nuclear shell structure—**115**, 1681
Senitzky, B. Electron emission from Si *p-n* junctions—**116**, 874
Senitzky, I. R. Induced and spontaneous emission in coherent field. II—**115**, 227
Sens, J. C. Capture of negative muons by nuclei—**113**, 679
Seraphim, D. P. and R. A. Connell. Resistance transitions in superconducting Ta—**116**, 606
Serber, R. (see Pais, A.)—**113**, 955
Serin, B. (see Alley, P.)—**116**, 334
—— (see Chanin, G.)—**114**, 719
Sessler, A. M. (see Cooper, L. N.)—**114**, 1377
Seward, Frederick D. Reaction mechanisms in inelastic scattering of protons from Mg, Cr, and other elements from 3.5 to 7 Mev—**114**, 514
Shafroth, S. M. (see Levesque, R. J. A.)—**114**, 1354
Shaltiel, D. (see Low, W.)—**115**, 424
Shapiro, A. M. (see Erwin, A. R., Jr.)—**115**, 669
Shapiro, J. and G. Breit. Metastability of *2s* states of hydrogenic atoms—**113**, 179; **115**, 1779(E)
Shapiro, S. and N. Bloembergen. Relaxation effects in maser material $K_3(CoCr)(CN)_6$—**116**, 1453
—— (see Bloembergen, N.)—**114**, 445
Shaw, C. H. (see Soules, Jack A.)—**113**, 470
Shaw, Gordon L. (see Ross, Marc H.)—**115**, 1773
Sheline, R. K. (see Bayman, B. F.)—**115**, 1627
—— (see Bjørnholm, S.)—**115**, 1613
Shen, K. Y. (see Griem, Hans R.)—**116**, 4
Sherman, Noah and Donald F. Nelson. Determination of electron polarization by means of Mott scattering—**114**, 1541
Sherwood, J. E. and S. J. Ovenshine. Nuclear spins of I^{128} and I^{130}—**114**, 858
Shipley, E. N., G. E. Owen, and L. Madansky. Angular distributions of neutrons inelastically scattered from Na—**115**, 122
Shirley, Virginia S. (see Gallagher, C. J., Jr.)—**113**, 1298
Shook, G. B. Angular distributions and correlations for α scattering by C^{12}, Mg^{24}, and Ca^{40}—**114**, 310
Shugart, Howard A. (see Ewbank, W. B.)—**115**, 614
—— (see Petersen, F. Russell)—**116**, 734
Shull, F. B. (see Allas, R. G.)—**116**, 996
Siegert, A. J. F. Field operators for bosons with impenetrable cores. I. Equations which replace commutation rules—**116**, 1057
Sihvonen, Y. T., D. R. Boyd, and C. D. Woelke. Some properties of green and red-green luminescing CdS—**113**, 965
—— (see Vuylsteke, A. A.)—**113**, 40
Silberberg, Rein (see Chamberlain, Owen)—**113**, 1615
Silbert, M. G. (see Johnsrud, A. E)—**116**, 927
Silsbee, H. B. (see Ewbank, W. B.)—**115**, 614
Silverman, A. (see McDaniel, B. D.)—**115**, 1039
Silverman, B. D. and P. R. Weiss. Polarization of electron gas in metals by substitutional impurities—**114**, 989
Simanton, James R. (see Rightmire, Robert A.)—**113**, 1069
Simmons, R. O. Lattice parameter changes in deuteron-irradiated Ge—**113**, 70
Simon, Ralph E. Work function of Fe surfaces produced by cleavage in vacuum—**116**, 613
Simons, Lennart. 515-kev and 679-kev resonances in reaction $Na^{23}(p,\gamma)Mg^{24}$—**114**, 569
Singh, D. N. and W. A. Bowers. Vibrational spectrum of V—**116**, 279
Singh, J. J. γ rays from $Si^{29}+p$—**115**, 445
—— Radiative capture of protons in Be^9—**114**, 871
—— 708-kev γ ray in P^{30}—**115**, 1015
——, **V. W. Davis, and R. W. Krone.** Energy levels in Na^{23} from $Ne^{22}(p,\gamma)Na^{23}$ reaction—**115**, 170
Singh, Virendra. Ground-state energy of boson gas—**116**, 507
Singletary, John B. and Donald E. Wood. Scattering of 14-Mev neutrons by C—**114**, 1595
Sippel, Robert F. Diffusion measurements in system Cu-Au by elastic scattering—**115**, 1441
Sirlin, Alberto (see Kinoshita, Toichiro)—**113**, 1652
—— (see Margolis, B.)—**114**, 1530
Sjoblom, Ruth K. (see Smith, A. B.)—**114**, 1351
—— (see Vandenbosch, Susanne E.)—**115**, 115
Skilbreid, O. (see Toth, K. S.)—**116**, 118
Skjeggestad, O. and S. O. Sörensen. Emission of heavy fragments in nuclear disintegrations—**113**, 1115
Slattery, J. C. (see Bonner, T. W.)—**113**, 1088; **115**, 398
Slaus, I. and W. Parker Alford. Elastic scattering of deuterons from Mg, Al, Ti, V, Cr, Co, Ni, and Cu—**114**, 1054
Slichter, Charles P. (see Hebel, L. C.)—**113**, 1504
—— (see Spokas, John J.)—**113**, 1462
Slobodrian, J. (see Lenk, P. A.)—**116**, 1229
Slutsky, L. J. and C. W. Garland. Elastic constants of InSb from 4.2°K to 300°K—**113**, 167
Smith, A. B., P. R. Fields, R. K. Sjoblom, and J. H. Roberts. Precise determination of U^{233} fission neutron spectrum—**114**, 1351
——, **R. G. Nobles, and S. A. Cox.** Number of prompt neutrons emitted per Th^{232} fission—**115**, 1242
Smith, E. C., G. S. Pawlicki, P. E. F. Thurlow, G. W. Parker, W. J. Martin, G. E. Creek, and P. M. Lantz. Total neutron cross section of Xe^{135} as function of energy—**115**, 1693
Smith, George E. Anomalous skin effect in Bi—**115**, 1561
Smith, J. F. and J. D. Greiner. Magnetic susceptibility of Th metal in range 130–300°K—**115**, 884
Smith, P. L. (see Bailey, C. A.)—**114**, 1010
Smith, R. B. (see Corbett, J. W.)—**114**, 1452; **114**, 1460
Smith, R. K. (see Cranberg, L.)—**113**, 587
Smith, Stephen J. and David S. Burch. Relative measurement of photodetachment cross section for H^-—**116**, 1125
—— (see Burch, D. S.)—**114**, 1652(E)
Smith, W. G., P. H. Stelson, and F. K. McGowan. Decay of $I^{130} \rightarrow Xe^{130}$—**114**, 1345
—— (see Johnson, O. E.)—**116**, 992
—— (see Stelson, P. H.)—**116**, 167
Smith, W. V., P. P. Sorokin, I. L. Gelles, and G. J. Lasher. Electron-spin resonance of N donors in diamond—**115**, 1546
Smoluchowski, R. (see Howard, R. E.)—**116**, 314
—— (see Ryan, F. M.)—**116**, 1106
—— (see Wiegand, D. A.)—**116**, 1069
Snell, Arthur H., F. Pleasonton, and John L. Need. Charge spectrometry for Kr^{79}-Br^{79}—**116**, 1548
Snowdon, S. C. (see Machwe, M. K.)—**114**, 1563
Sobottka, Stanley E. (see Ehrenberg, Hans F.)—**113**, 666
Sodha, Mahendra Singh. Electron mobility in partially ionized atomic H—**113**, 1163
—— Transport phenomena in slightly ionized gases: low electric fields—**116**, 486
—— **and Y. P. Varshni.** Dependence of electron mobility on magnetic field in fully ionized gas—**114**, 946
—— **and Y. P. Varshni.** Transport properties on nondegenerate *n*-type semiconductors considering electron-electron scattering—**114**, 717
Solmitz, Frank T. (see Crawford, Frank S., Jr.)—**113**, 1601
Solt, I. H., Jr. (see Fletcher, P.)—**114**, 739
Sommer, A. H. (see Spicer, W. E.)—**115**, 57
Sommerfield, Charles M. (see Karplus, Robert)—**114**, 376
Sörensen, S. O. (see Skjeggestad, O.)—**113**, 1115
Sorokin, P. P. (see Smith, W. V.)—**115**, 1546
Sosin, A. (see Meechan, C. J.)—**113**, 422
Soules, Jack A. and C. H. Shaw. X-ray *K*-absorption spectra of solid A and Kr—**113**, 470
Spedding, F. H. (see Hall, P. M.)—**116**, 1446
Spence, R. D. (see Forstat, H.)—**116**, 897
Spencer, H. E. Effect of thickness of thin films of PbS on spectral response of photoconductivity—**113**, 1417
Spencer, Lewis V. (see Berger, Martin J.)—**113**, 408

Spencer, R. R. (see Young, T. E.)—**116**, 962
Spicer, W. E., A. H. Sommer, and J. G. White. Studies of semiconducting properties of compound CsAu—**115**, 57
Spiewak, M. Magnetic field dependence of surface impedance of superconducting Sn—**113**, 1479
Spitzer, W. G., D. A. Kleinman, and C. J. Frosch. Infrared properties of cubic SiC films—**113**, 133
——, **D. Kleinman, and D. Walsh.** Infrared properties of hexagonal SiC—**113**, 127
—— **and J. M. Whelan.** Infrared absorption and electron effective mass in *n*-type GaAs—**114**, 59
Spokas, John J. and Charles P. Slichter. Nuclear relaxation in Al—**113**, 1462
Spruch, Grace Marmor (see Kallmann, Hartmut)—**116**, 628
Spruch, Larry and Wallace Gold. Coulomb corrections in theory of internal bremsstrahlung—**113**, 1060
—— **and Martin Kelly.** Pluvinage method for systems of three charged particles—**116**, 911
—— **and Leonard Rosenberg.** Upper bounds on scattering lengths for static potentials—**116**, 1034
Sreedhar, A. K. (see Brewer, D. F.)—**115**, 836
Stähelin, P. (see Allen, J. S.)—**116**, 134
Stahl-Brada, R. and W. Low. Optical spectrum of Co^{2+} in cubic crystalline field of CaF_2—**113**, 775
—— **and W. Low.** Paramagnetic resonance spectra of Cr and Mn in spinel structure—**116**, 561
Stanghellini, A. (see Cini, M.)—**114**, 1633; **115**, 1779(E)
Stapp, Henry P. (see Cziffra, Peter)—**114**, 880
—— (see MacGregor, Malcolm H.)—**116**, 1248
Starner, J. W. (see Bunker, M. E.)—**116**, 143
Statz, H. and G. F. Koster. Splittings of paramagnetic atoms in crystalline fields—**115**, 1568
—— (see Aisenberg, Sol)—**116**, 811
—— (see Koster, G. F.)—**113**, 445
Stebbings, R. F. (see Fite, Wade L.)—**116**, 356; **116**, 363
Steffen, R. M. Circular polarization of γ radiation following allowed β transitions—**115**, 980
Stehle, P. M. (see Bég, M. A. B.)—**113**, 1545
Stehney, Andrew F. (see Perlow, Gilbert J.)—**113**, 1269
Steigert, F. E. (see Plendl, H. S.)—**116**, 1534
Stelson, P. H., W. G. Smith, and F. K. McGowan. Polarization of γ rays in Pb^{207}—**116**, 167
—— (see McGowan, F. K.)—**116**, 154
—— (see Smith, W. G.)—**114**, 1345
Stephens, F. S., Frank Asaro, and I. Perlman. Classification of energy levels of odd-mass nuclei in heavy-element region—**113**, 212
Stern, Frank. Calculation of cohesive energy of metallic Fe—**116**, 1399
Sternheimer, R. M. Effect of electric dipole moment of proton on energy levels of H atom—**113**, 828
—— Electronic polarizabilities of ions—**115**, 1198
—— Range-energy relations for protons in Be, C, Al, Cu, Pb, and air—**115**, 137
Stevenson, M. Lynn (see Crawford, Frank S., Jr.)—**113**, 1601
Stokes, Richard H. (see Northrop, John A.)—**115**, 1277
Stooksberry, Robert W. and Marshall F. Crouch. Neutron-proton capture cross section—**114**, 1561
Storey, J. R. Cosmic-ray latitude survey along 145° east longitude using airborne neutron monitor—**113**, 297
—— Latitude dependence of Forbush-type cosmic-ray intensity decrease observed at aircraft altitude—**113**, 302
Stork, D. H. (see Melkanoff, M. A.)—**113**, 1303
St. Pierre, Claude, M. K. Machwe, and Paul Lorrain. Elastic scattering of 14-Mev neutrons by Al, S, Ti, and Co—**115**, 999
Strauss, A. J. (see Zitter, R. N.)—**115**, 266
Strominger, D. Lifetime of 186-kev level of Th^{231}—**114**, 502
Strong, H. M. and F. P. Bundy. Fusion curves of four group VIII metals to 100 000 atmospheres—**115**, 278
Stump, Robert (see Daniel, Thomas Bruce)—**115**, 1599
Succi, C. (see Conversi, M.)—**114**, 1150
Sudarshan, E. C. G. (see Bose, S. K.)—**113**, 1661
—— (see Deser, Stanley)—**115**, 731
—— (see Okubo, S.)—**113**, 944
—— (see Teutsch, W. B.)—**114**, 1148
Sugawara, Masao. Universal weak boson and fermion interaction—**113**, 1361
—— **and A. Kanazawa.** Meson-meson scattering term in *ps-ps* meson theory—**115**, 1310
Sugawara, Masumi (see Morinaga, H.)—**114**, 1146
Suh, K. S. and H. A. Bethe. Recoil momentum distribution in electron pair production—**115**, 672
Suhl, Harry and B. T. Matthias. Impurity scattering in superconductors—**114**, 977
—— (see Anderson, P. W.)—**116**, 898
—— (see Bozorth, R. M.)—**115**, 1595
—— (see Matthias, Bernd)—**115**, 1597
Summers, R. (see Chidley, B.)—**116**, 1015
Sunakawa, Sigenobu and Katsumi Tanaka. Proton-neutron mass difference—**115**, 754
Sundaresan, M. K. (see Nigam, B. P.)—**115**, 491
Swami, M. S. Mass of charged Σ hyperons—**114**, 333
Swan, J. B. (see Powell, C. J.)—**115**, 869; **116**, 81
Swann, C. P., V. K. Rasmussen, and F. R. Metzger. Lifetime of first excited state of Li^7—**114**, 862
Sweetman, D. R. (see McKee, J. S. C.)—**115**, 143
Swihart, James C. Isotope effect in Bardeen-Cooper-Schrieffer and Bogoliubov theories of superconductivity—**116**, 45
—— Law of corresponding states in superconductivity—**116**, 346
Sydoriak, Stephen G. (see Laquer, Henry L.)—**113**, 417
Sykes, M. F. (see Fisher, Michael E.)—**114**, 45
Szöke, A. and S. Meiboom. Radiation damping in nuclear magnetic resonance—**113**, 585

Taft, E. A. and H. R. Philipp. Structure in energy distribution of photoelectrons from K_3Sb and Cs_3Sb—**115**, 1583
——, **H. R. Philipp, and L. Apker.** Exciton-induced photoemission from BaO near 80°K—**113**, 156
—— (see Philipp, H. R.)—**113**, 1002
Tamura, T. and D. C. Choudhury. Inelastic scattering of protons by various nuclei—**113**, 552
Tanaka, Katsumi. Structure of neutron—**113**, 714
—— (see Sunakawa, Sigenobu)—**115**, 754
Tang, Y. C., R. H. Lemmer, P. J. Wyatt, and A. E. S. Green. Plausibility of nonlocal optical model—**116**, 402
Tangherlini, F. R. (see Lazarus, Alan J.)—**113**, 1330
Tani, Smio. Formal theory of scattering in quantum field theory—**115**, 711
Tanikawa, Yasutaka and Satosi Watanabe. Fermi interaction caused by intermediary chiral boson—**113**, 1344
—— (see Oneda, S.)—**113**, 1354
Tannenwald, L. M. Coulomb scattering in very strong magnetic field—**113**, 1354
Tanner, Neil. Direct radiative capture of protons by O^{16} and Ne^{20}—**114**, 1060
—— (see Meyerhof, W. E.)—**115**, 1227
Taylor, E. F. and N. Bloembergen. Nuclear spin saturation by ultrasonics in NaCl—**113**, 431
Taylor, G. (see Forstat, H.)—**116**, 897
Taylor, H. W. and W. R. Frisken. γ-γ directional correlation in Cd^{110}—**114**, 127
—— **and S. A. Scott.** Disintegration of Ag^{110m}—**114**, 121
Taylor, John G. Method for determination of strange particle parities and coupling constants—**116**, 768
——, **Michael J. Moravcsik, and Jack L. Uretsky.** Determination of pion-nucleon coupling constant from photoproduction angular distribution—**113**, 689
—— (see Oehme, Reinhard)—**113**, 371
—— (see Rockmore, Ronald M.)—**113**, 1697(E)

Taylor, John W. and Paul L. Hartman. Photoelectric effects in certain of alkali halides in vacuum uv—**113**, 1421
Taylor, R. T. Proton-γ angular correlation studies of Be^9 and $Ca^{40}(d,p\gamma)$ stripping reactions—**113**, 1293
Taylor, S., G. Harris, J. Orear, J. Lee, and P. Baumel. Lifetimes and decay spectra of τ'^+ and $K_{\mu 3}^+$—**114**, 359
Tchen, C. M. Kinetic equation for plasma with unsteady correlations—**114**, 394
Teaney, Dale (see Portis, A. M.)—**116**, 838
Teegarden, K. J. (see Eby, J. E.)—**116**, 1099
Temkin, A. Scattering of electrons from atomic H—**116**, 358
Tendam, D. J. (see Corelli, J. C.)—**116**, 1184
ter Haar, D. (see Coldwell-Horsfall, Rosemary A.)—**115**, 891
Terrell, James. Fission neutron spectrum and nuclear temperatures—**113**, 527
—— Invisibility of Lorentz contraction—**116**, 1041
Teucher, M. W. (see Jain, P. L.)—**115**, 643; **115**, 654
—— (see Lohrmann, E.)—**115**, 636
—— (see Schein, Marcel)—**116**, 1238
Teutsch, W. B., S. Okubo, and E. C. G. Sudarshan. Decay of cascade particles—**114**, 1148
Tewordt, L. (see Bardeen, J.)—**113**, 982
Thaler, R. M. Polarizability of neutron—**114**, 827
Theimer, O. and R. Gentry. Scattering potentials in fully ionized gases—**116**, 787
Thieberger, R. Phenomenological nuclear interaction derived from binding energies—**116**, 713
Thomas, Billy S. and W. G. Holladay. Pion-pion interaction in τ^+-meson decay—**115**, 1329
Thomas, D. G. and J. J. Hopfield. Exciton spectrum of CdS—**116**, 573
Thomas, H. C. (see Brosi, A. R.)—**113**, 239
Thomas, L. H. General relativity and particle dynamics—**115**, 1778(E)
Thomas, M. Tom (see Russek, A.)—**114**, 1538
Thomas, T. Darrah. Cross section for compound-nucleus formation in heavy-ion-induced reactions—**116**, 703
Thomson, Robb (see Huntington, H. B.)—**113**, 1696(E)
Thornton, W. A. ac-dc electroluminescence—**113**, 1187
—— Electroluminescence at low voltages—**116**, 893
Thouless, David J. Proof of linked-cluster expansion in quantum statistical mechanics—**116**, 21
—— Single-particle energies in many-fermion system—**114**, 1383
Thurlow, P. E. F. (see Smith, E. C.)—**115**, 1693
Tichelaar, G. W. and D. Lazarus. Effect of pressure on anelastic relaxation in Ag-Zn—**113**, 438
Ticho, Harold (see Crawford, Frank S., Jr.)—**113**, 1601
—— (see Melkanoff, M. A.)—**113**, 1303
Tietz, T. Electron scattering cross section with relativistic correction based on Thomas-Fermi theory—**113**, 1056
—— X-ray incoherent scattering function of atoms based on Thomas-Fermi theory—**113**, 1521
Tilley, D. R. and Leon Madansky. Search for positron emission in K^{40}—**116**, 413
Titus, W. F. Total photoelectric cross sections of Cu, Mo, Ag, Ta, and Au at 662 kev—**115**, 351
Tobin, R. A. (see Cohen, L.)—**114**, 590
Tobocman, W. Numerical evaluation of deuteron stripping cross sections and polarizations—**115**, 98
—— **and D. E. Bilhorn.** Simple model for giant resonance effects in nuclear reactions—**115**, 1275
Toll, John S. (see Lutzky, Morton)—**113**, 1649
—— (see Prats, Francisco)—**113**, 363
Tomboulian, D. H. (see Bedo, D. E.)—**113**, 464
Toner, W. T. (see McKee, J. S. C.)—**115**, 143
Tonks, Lewi. Self-consistent field of single-type electrons in uniform magnetic field—**114**, 637
—— Trajectory-wise analysis of cylindrical and plane plasmas in magnetic field and without collisions—**113**, 400
Torelli, G. (see Conversi, M.)—**114**, 1150
Toth, Kenneth S., S. Bjørnholm, M. Jorgensen, O. B. Nielsen, and O. Skilbreid. Tb^{150}: new Tb isotope—**116**, 118
——, **Kenneth T. Faler, and John O. Rasmussen.** New Tb isotope Tb^{152}—**115**, 158
—— **and O. B. Nielsen.** Decay of Pm^{144}—**115**, 1004
—— **and John O. Rasmussen.** Nuclear spectroscopic studies of neutron-deficient isotopes in rare earth region—**115**, 150
Towle, L. C. and J. A. Lockwood. Cosmic-ray increases associated with solar flares—**113**, 641
Traub, J. and H. M. Foley. Variational calculations of energy and fine structure for $2\,^3P$ state of He—**116**, 914
Treiman, S. B. Ξ^- capture reactions in H—**113**, 355
—— **and S. Weinberg.** Interference effects in neutral K-particle decay—**116**, 239
—— (see Goldberger, M. L.)—**113**, 1663
—— (see Weinberg, S.)—**116**, 465
Triebwasser, S. Study of ferroelectric transitions of solid-solution single crystals of $KNbO_3-KTaO_3$—**114**, 63
Tripp, Robert (see Horwitz, Nahmin)—**115**, 472
Tromp, R. L. (see Regier, R. B.)—**113**, 1589
Troubetzkoy, E. S. (see Mossin-Kotin, C.)—**116**, 937
Truell, Rohn. Nature of defects arising from fast neutron irradiation of Si single crystals—**116**, 890
Tsai, Yung Su (see Johnston, Lawrence H.)—**115**, 1293
Tsao, C. H. (see Kalbach, R. M.)—**113**, 325; **113**, 330
Tuan, San Fu. Unphysical region in heavy-meson nucleon dispersion relations—**113**, 1375
Turk, E. H. (see Schuman, R. P.)—**115**, 185
Turnbull, David (see DeSorbo, Warren)—**115**, 560

Überall, H. Hyperfine splitting effects in capture of polarized μ^- mesons—**114**, 1640
—— μ-meson capture in Li^6 leading to ground state of He^6—**116**, 218
—— (see Fronsdal, C.)—**113**, 654
Uehling, Edwin A. (see Bjorkstam, John L.)—**114**, 961
Uhlenbeck, G. E. (see Pais, A.)—**116**, 250
Umezawa, Hiroomi (see Ezawa, Hiroshi)—**116**, 463
Unik, John P. and John O. Rasmussen. Decay schemes of isomers of Tc^{98} and Tc^{97}—**115**, 1687
Uretsky, Jack L. (see Taylor, John G.)—**113**, 689
Usui, Tunemaru. Landau's model of liquid He^3—**114**, 21
Utterback, N. G. and G. H. Miller. Ionization yields for fission fragments—**116**, 976

Vandenbosch, R. Decay of Np^{241}—**113**, 259
Vandenbosch, Susanne E., Herbert Diamond, Ruth K. Sjoblom, and Paul R. Fields. β decay of Bk^{250} and Bk^{249}—**115**, 115
Vanderslice, Joseph T. (see Mason, Edward A.)—**114**, 497
van Loef, J. J. (see Rapaport, J.)—**114**, 565
Varshni, Y. P. (see Sodha, M. S.)—**114**, 717; **114**, 946
Vaughn, F. J. (see Imhof, W. L.)—**114**, 1037
Vedam, K. (see Pepinsky, R.)—**114**, 1217
Vedder, James (see Dudziak, Walter F.)—**114**, 336
Vieth, R. F. (see Dobrov, W. I.)—**115**, 79
Visscher, William M. Neutrino detection by resonance absorption in crystals at low temperature—**116**, 1581
Vitale, B. (see Galzenati, E.)—**113**, 1635
Voelker, V. H. (see Romanowski, T. A.)—**113**, 886
Volkin, Howard C. Slow-neutron scattering by rotators—**113**, 866
von Roos, Oldwig. Collision-induced spin flip of H atoms—**115**, 911
Vook, Frederick L. and R. W. Balluffi. Length and resistivity changes in Ge upon low-temperature deuteron irradiation and annealing—**113**, 62
—— **and R. W. Balluffi.** Structure of deuteron-irradiated Ge—**113**, 72

Vorona, J., J. W. Olness, W. Haeberli, and H. W. Lewis. Levels of P^{29} from $Si^{28}(p,p)Si^{28}$ and $Si^{28}(p,p')Si^{28*}$—116, 1563
Vuylsteke, A. A. and Y. T. Sihvonen. S vacancy mechanism in pure CdS—113, 40

Waddington, C. J. (see Freier, P. S.)—113, 921; 114, 365
Wagner, J. J. (see Carter, R. E.)—113, 280
Wahlgren, Morris A. and W. Wayne Meinke. Isomeric state of Pt^{193}—115, 191
Walecka, D. (see Fubini, S.)—116, 194
Walker, L. R. Antiferromagnetic linear chain—116, 1089
Walker, R. M. (see Corbett, J. W.)—114, 1452; 114, 1460; 115, 67
Wall, N. S. (see Hunting, C. E.)—115, 956
Wallace, Roger (see Hess, Wilmot N.)—116, 445
Wallis, Richard F. Theory of surface modes of vibration in two- and three-dimensional crystal lattices—116, 302
—— (see Burstein, E.)—113, 15
Walsh, D. (see Spitzer, W. G.)—113, 127
Walsh, Peter J. Effect of simultaneous Doppler and collision broadening and of hfs on imprisonment of resonance radiation—116, 511
—— **and Sidney Borowitz.** Application of wave functions containing interelectron coordinates. I. Ground-state energy of Li—115, 1206
Walsh, Walter M., Jr. Pressure dependence of paramagnetic resonance spectra of two dilute Cr salts—114, 1485
—— Stress and temperature dependence of paramagnetic resonance spectrum of nickel fluosilicate—114, 1472
Walt, M. (see Imhof, W. L.)—114, 1037
Wangsness, Roald K. Effective ferrimagnetic resonance parameters with Gilbert-type relation terms—113, 771
Warburton, E. K. Inhibition of magnetic dipole radiation and identification of $T=1$ states in light, self-conjugate nuclei—113, 595
——, **H. J. Rose, and E. N. Hatch.** $C^{13}(p,\gamma)N^{14}$ 1.47- and 2.11-Mev resonances and odd-parity levels of mass 14—114, 214
Warner, Robert E. and W. Parker Alford. Polarization of 6- and 7-Mev protons elastically scattered by nuclei—114, 1338
Warren, B. (see Bunker, M. E.)—116, 143
Watanabe, Satosi (see Tanikawa, Yasutaka)—113, 1344
Watase, Yuzuru (see Fukui, Shuji)—113, 315
Waterman, P. C. Orientation dependence of elastic waves in single crystals—113, 1240
Waters, John R. Photoproduction of charged π mesons from nuclei—113, 1133
Watkins, George D. Electron spin resonance of Mn^{++} in alkali chlorides: association with vacancies and impurities—113, 79
—— Motion of Mn^{++}-cation vacancy pairs in NaCl: study by electron spin resonance and dielectric loss—113, 91
Watson, Kenneth M. (see Glassgold, A. E.)—115, 1374
—— (see Lippmann, Bernard A.)—116, 920
—— (see Mittleman, Marvin H.)—113, 198
Watson, W. K. R. (see Norton, R. E.)—116, 1597
Watson, W. W. (see Mann, D. P.)—116, 1516
Watts, T. L. (see McIntyre, J. A.)—116, 1212
Waugh, J. S. (see Klein, M. P.)—116, 960
Weaner, D. H. (see Enge, H. A.)—115, 949
Webber, William R. (see McDonald, Frank B.)—115, 194
Wehner, G. K. Velocities of sputtered atoms—114, 1270
Wei, Chau-Chin. Relativistic hydrodynamics for charged nonviscous fluid—113, 1414
Weibel, Erich S. Stable orbits of charged particles in oscillating electromagnetic field—114, 18
Weinberg, Steven. Interference effects in leptonic decays—115, 481
—— **and S. B. Treiman.** Electromagnetic corrections to isotopic spin conservation—116, 465
—— (see Treiman, S. B.)—116, 239
Weiner, D. (see Massalski, T. B.)—115, 301
Weiner, Richard. Charge distributions of excited isomeric nuclei and atomic spectra (nuclear isomeric shift)—113, 256
Weinreich, Gabriel, T. M. Sanders, Jr., and Harry G. White. Acoustoelectric effect in *n*-type Ge—114, 33
Weinreich, O. A. (see Reed, B.)—113, 454
Weiss, G. H. (see Domb, C.)—115, 18; 115, 24
Weiss, George (see Gillis, Joseph)—115, 1520
Weiss, P. R. (see Charap, S. H.)—116, 1372
—— (see Silverman, B. D.)—114, 989
Weisskopf, Victor F. Meson-nucleon scattering and nuclear forces—116, 1615
Weizer, V. G. (see Damask, A. C.)—113, 781
—— (see Girifalco, L. A.)—114, 687
Wells, D. O. (see Horen, D. J.)—113, 875
Wenzel, William A. (see Cool, R. L.)—114, 912
Wertheim, G. K. Recombination properties of Ni and Ge—115, 37
—— Temperature-dependent defect production in bombardment of semiconductors—115, 568
West, Harry I., Jr., Lloyd G. Mann, and Glen M. Iddings. Decay of Nb^{92}—113, 881; 114, 1652(E)
Westberg, Russell George. Nature and role of ionizing potential space waves in glow-to-arc transitions—114, 1
Wetherell, A. M. Interference effects of retardation term in pion photoproduction—115, 1722
Whelan, J. M. (see Spitzer, W. G.)—114, 59
Whetstone, Stanley L., Jr. Prompt neutron emission from single fission fragments—114, 581
White, Harry G. (see Weinreich, Gabriel)—114, 33
White, J. G. (see Spicer, W. E.)—115, 57
White, Robert L. Dipolar line broadening and enhanced pseudo-dipolar moments—115, 1519
—— **and John P. Andelin, Jr.** Energy levels for rare earth ions subject both to exchange and crystalline fields—115, 1435
Whittemore, W. L. and A. W. McReynolds. Effects of chemical binding on neutron cross section of H—113, 806
—— (see Pelah, I.)—113, 767
Wichmann, Eyvind H. (see Karplus, Robert)—114, 376
Wickham, D. J. and J. B. Goodenough. Suggestion concerning magnetic interaction in spinels—115, 1156
Widgoff, M. (see Fazio, G. G.)—116, 1263
Wiedenbeck, M. L. (see Lide, R. W.)—113, 840
Wiedling, T. (see Asplund, I.)—116, 741
Wiegand, Donald A. Low-temperature luminescence and photoconductivity of AgCl—113, 52
—— **and R. Smoluchowski.** Low-temperature annealing of irradiation-induced effects in LiF—116, 1069
Wiig, Edwin O. (see Caretto, Albert A., Jr.)—115, 1238
Wikner, E. G. and T. P. Das. Variational calculations of dipole polarizabilities of He-like ions—113, 1696(E)
Wilets, Lawrence. Surface coupling mechanism for approaching statistical equilibrium in compound nucleus formation, with application to fission—116, 372
Wilkinson, D. H. and D. E. Alburger. β decay of Be^{11}—113, 563
—— (see Alburger, D. E.)—116, 939
—— (see Elwyn, A.)—116, 1490
Wilkinson, M. K., J. W. Cable, E. O. Wollan, and W. C. Koehler. Neutron diffraction investigations of magnetic ordering in $FeBr_2$, $CoBr_2$, $FeCl_2$, and $CoCl_2$—113, 497
Wille, R. G. and R. W. Fink. Two new prometheum isotopes; cross sections of some Sm isotopes for 14.8-Mev neutrons—114, 1652(E)
Williams, F. E. and P. D. Johnson. Configuration coordinate model for KCl:Tl including spin-orbit interaction—113, 97
Williams, John H. (see Brussel, Morton K.)—114, 525
Willis, William J. π^+-p interactions at 500 Mev—116, 753
Wilson, R. R. (see McDaniel, B. D.)—115, 1039

Wilson, Richard. Nuclear parameters in scattering of nucleons by C—**114**, 260
—— (see Carpenter, Stuart G.)—**113**, 650; **114**, 510
—— (see Cormack, A. M.)—**115**, 599
Wing, J., W. J. Ramler, A. L. Harkness, and J. R. Huizenga. Excitation functions of U^{235} and U^{238} bombarded with He and deuteron ions—**114**, 163
—— (see Ramler, W. J.)—**114**, 154
Winocur, J. O. (see Hubbs, J. C.)—**114**, 586
Witten, Louis. Geometry of gravitation and electromagnetism—**115**, 206
—— Invariants of general relativity and classification of spaces—**113**, 357
Woelke, C. D. (see Sihvonen, Y. T.)—**113**, 965
Wojtowicz, Peter J. Theoretical model for tetragonal-to-cubic phase transformations in transition metal spinels—**116**, 32
Wolf, W. P. Cooling by adiabatic magnetization—**115**, 1196
Wolfenstein, L. (see Manacher, G. K.)—**116**, 782
Wolff, G. A., I. Adams, and J. W. Mellichamp. Electroluminescence of AlN—**114**, 1262
Wolff, P. A. Effects of electron correlation on optical properties of metals—**116**, 544
Wolfson, Y. (see Birk, M.)—**116**, 730
Wolicki, E. A., H. D. Holmgren, R. L. Johnston, and E. Geer Illsley. Differential cross sections for $Be^{9}(He^{3},p)B^{11}$ reaction—**116**, 1585
—— (see Holmgren, H. D.)—**114**, 1281
Wollan, E. O. (see Wilkinson, M. K.)—**113**, 497
Wong, C., J. D. Anderson, C. C. Gardner, J. W. McClure, and M. P. Nakada. Neutron spectra from $p+d$ reaction—**116**, 164
—— (see Anderson, John D.)—**115**, 1010
Wood, Donald E. (see Singletary, John B.)—**114**, 1595
Wood, G. T. Directional and polarization correlation measurements on Eu^{152m}—**116**, 1499
Woodbury, H. H. (see Ludwig, G. W.)—**113**, 1014
Woods, E. J. (see O'Neill, G. K.)—**115**, 659
Wright, Byron T. (see Royden, Herbert N.)—**113**, 294
Wright, Kenneth A. (see Gross, Bernhard)—**114**, 725
Wu, C. S. (see Benczer-Koller, N.)—**115**, 108
Wu, Tai Tsun. Ground state of Bose system of hard spheres—**115**, 1390
Wu, Ta-You (see Nigam, B. P.)—**115**, 491
Wyatt, P. J. (see Tang, Y. C.)—**116**, 402
Wyman, M. E. (see Carter, R. E.)—**113**, 280

Yafet, Y. Energy levels of conduction electrons in magnetic field—**115**, 1172
—— (see Bowers, R.)—**115**, 1165
Yager, W. A. (see Galt, J. K.)—**114**, 1396
Yahia, J. and J. A. Marcus. Galvanomagnetic properties of Ga at low temperatures—**113**, 137
Yamada, Noboru (see Kinase, Wataru)—**116**, 348
Yamashita, J. (see Keffer, F.)—**115**, 1553
Yang, C. N. (see Lee, T. D.)—**113**, 1165; **113**, 1406; **116**, 25
Yarnell, J. L., G. P. Arnold, P. J. Bendt, and E. C. Kerr. Excitations in liquid He: neutron scattering measurements—**113**, 1379
—— (see Bendt, P. J.)—**113**, 1386
Yatsiv, Shaul. Multiple quantum transitions in nuclear resonance—**113**, 1522
—— Role of double quantum transitions in masers—**113**, 1538
Yennie, Donald R. (see Foldy, Leslie L.)—**113**, 1147
Yntema, J. L. Elastic scattering of 21.6-Mev deuterons—**113**, 261
—— Elastic scattering of 21.6-Mev deuterons by separated isotopes of Ni and Cu—**114**, 820
—— **and B. Zeidman.** Inelastic scattering of 21.6-Mev deuterons—**114**, 815
Yokoi, K. (see Aizu, H.)—**116**, 436
York, C. M., R. March, W. Kernan, and J. Fischer. Study of neutral pion production in p-p collisions—**113**, 1339
—— (see Garwin, E. L.)—**115**, 1295
Yoshida, S. (see Sekido, Y.)—**113**, 1108
Young, D. E. (see Johnston, L. H.)—**116**, 989
Young, James E. Three-body breakup; deuteron dissociation cross sections—**116**, 1201
Young, O. B. and H. Y. Chen. Heavy primary cosmic rays at geomagnetic latitude of 41°N—**115**, 1719
Young, Robert C. Conversion electron angular correlations: general K-shell formulation and threshold limit—**115**, 577
Young, Russel D. Theoretical total-energy distribution of field-emitted electrons—**113**, 110
—— **and Erwin W. Müller.** Experimental measurement of total-energy distribution of field-emitted electrons—**113**, 115
Young, T. E., G. C. Phillips, R. R. Spencer, and D. A. A. S. N. Rao. Nuclear energy levels in C^{13}, N^{13}, N^{14}, N^{15}, O^{15}, and F^{18} from He^{3}-induced reactions—**116**, 962

Zähringer, Josef (see Schaeffer, Oliver A.)—**113**, 674
Zaidi, M. H. Double scattering of electrons with dipole moment—**116**, 241
Zatzkis, Henry. Model of linear harmonic oscillator in general theory of relativity—**114**, 1645
Zdanis, Richard (see Meissner, Hans)—**113**, 1435
Zeidman, B. (see Schiffer, J. P.)—**115**, 427
—— (see Yntema, J. L.)—**114**, 815
Zemel, Jay N. Surface transport theory—**114**, 1652(E)
Zernik, W., M. L. Rustgi, and G. Breit. Note on photodisintegration of deuteron—**114**, 1358
Ziemba, F. P. and A. Russek. Resonance electron exchange in large-angle scattering of He^{+} on He at kev energies—**115**, 922
—— (see Jones, P. R.)—**113**, 182
Zimmerman, E. J. (see Lorents, Donald C.)—**113**, 1199
Zimmerman, R. L. (see Mann, D. P.)—**116**, 1516
Zimmermann, W., Jr. Experiments concerning low-energy states of O^{19} nucleus—**114**, 837
—— Lifetime of 0.119-Mev state of N^{16} nucleus—**114**, 867
Zitter, R. N., A. J. Strauss, and A. E. Attard. Recombination processes in p-type InSb—**115**, 266
Zucker, A. (see Fisher, D. E.)—**113**, 542
—— (see Halbert, M. L.)—**114**, 132; **115**, 1635
Zwerdling, Solomon, Benjamin Lax, Laura M. Roth, and Kenneth J. Button. Exciton and magneto-absorption of direct and indirect transitions in Ge—**114**, 80
—— (see Roth, Laura M.)—**114**, 90

Analytic Subject Index to Volume 113

References with (E) are to Errata. Items are listed under the following categories:

Acoustics
Astrophysics
Atomic and Molecular Beams
Atomic Mass and Abundance
Atomic Structure and Spectra
Biophysics
Chemical Effects and Properties
Constants, Standards, Units
Cosmic Radiation
Crystalline State
Dielectrics and Dielectric Properties
Diffraction
Diffusion
Elasticity and Plasticity
Electrical Conductivity and Resistance
Electrical Discharges
Electrical Properties
Electromagnetic Theory and Electrodynamics
Electrons and Positrons
Elementary Particle Interactions, General
Elementary Particle Interactions, Electromagnetic
Elementary Particle Interactions, Strong
Elementary Particle Interactions, Weak
Errata
Field Theory
Films, Properties
Fluid Dynamics
Gamma Rays
Gases
Geophysics
Helium, Liquid
Imperfections in Solids
Ionization
Ions
Ions and Electrons, Mobility
Liquids
Luminescence
Magnetic Properties
Magnetic Resonance
Mathematical Methods
Mechanics
Mesons and Hyperons
Methods and Instruments
Microwaves
Miscellaneous
Molecular Aggregates
Molecular Structure and Spectra
Neutrinos and Antineutrinos
Noise
Nuclear Fission
Nuclear Moments and Spin
Nuclear Photoeffects
Nuclear Reactions, General
Nuclear Reactions Induced by α Particles and He^3
Nuclear Reactions Induced by Deuterons and Tritons
Nuclear Reactions Induced by Mesons and Hyperons
Nuclear Reactions Induced by Neutrons
Nuclear Reactions Induced by Protons
Nuclear Spectra
Nuclear Structure Theory
Optical Properties
Plasma Physics
Quantum Electrodynamics
Quantum Mechanics
Radiation
Radioactivity
Range and Energy Loss
Relativity and Gravitation
Scattering, General
Scattering of α Particles
Scattering of Deuterons and Tritons
Scattering of Electrons and Positrons
Scattering of Mesons and Hyperons
Scattering of Neutrons
Scattering of Protons
Semiconductors
Spectra, General
Statistical Mechanics and Thermodynamics
Superconductivity
Thermal Properties
X-Rays

Absorption of Radiation (see **Optical Properties; Radiation**)

Acoustics
- Acoustical absorption arising from molecular resonance in solids, Leonard Liebermann—1052
- Acoustoelectric effect, R. H. Parmenter—102
- Nuclear spin saturation by ultrasonics in NaCl, E. F. Taylor and N. Bloembergen—431
- Theory of ultrasonic absorption in metals: collision-drag effect, T. Holstein—479
- Theory of ultrasonic cyclotron resonance in metals at low temperatures, T. Kjeldaas, Jr.—1473

Adsorption (see **Gases**)

Aerodynamics (see **Fluid Dynamics**)

Afterglow (see **Electrical Discharges**)

Alloys (see **Crystalline State**)

Annihilation (see **Electrons and Positrons**)

Antiferroelectric Phenomena (see **Dielectrics and Dielectric Properties**)

Antiferromagnetism (see **Magnetic Properties**)

Antineutrinos (see **Neutrinos and Antineutrinos**)

Antineutrons (see **Elementary Particle Interactions**)

Antiprotons (see **Elementary Particle Interactions**)

Arcs (see **Electrical Discharges**)

Astrophysics

Atmosphere (see **Geophysics**)

Atomic and Molecular Beams

Atomic Mass and Abundance
- Atomic masses of stable isotopes of Pb and Hg and mass difference D_2-He^4, Jay L. Benson, Richard A. Damerow, and Richard R. Ries—1105

Atomic Structure and Spectra
- Analytic wave functions. II. Atoms with $1s$, $2s$, $2p$, $3s$, and $3p$ electrons, R. G. Breene, Jr.—809
- Effect of electric dipole moment of proton on energy levels of H atom, R. M. Sternheimer—828
- Excited state wave functions, excitation energies, and oscillator strengths for $Ne(2p^5 3s)$, Albert Gold and Robert S. Knox—834
- Formation of positronium in electron gas, M. A. B. Bég and P. M. Stehle—1545
- K-series fluorescence yields of V, Mn, and Ne, W. F. Frey, R. E. Johnston, and J. I. Hopkins—1057
- Metastability of $2s$ states of hydrogenic atoms, J. Shapiro and G. Breit—179
- Nuclear structure correction to hfs in hydrogen, C. K. Iddings and P. M. Platzman—192
- Radiative capture of K mesons from orbital P states of K-mesonic atoms, Graham Frye—688
- Relativistic K-shell photoeffect, Mihai Gavrila—514
- Variational calculations of dipole polarizabilities of He-like ions, E. G. Wikner and T. P. Das—1696(E)

Auger Effect (see **Atomic Structure and Spectra; X-Rays**)

Aurora (see **Astrophysics; Geophysics**)

Barkhausen Effect (see **Magnetic Properties**)

Biophysics

Boson Theory (see **Field Theory**)

Bremsstrahlung (see **Radiation**)

Broadening of Spectral Lines (see **Atomic Structure and Spectra; Molecular Structure and Spectra; Spectra, General**)

Capture Cross Sections (see **Electrons and Positrons; Nuclear Reactions; Radiation**)
Čerenkov Effect (see **Radiation**)
Chemical Effects and Properties
Chemical Reactions (see **Chemical Effects and Properties**)
Chemiluminescence (see **Luminescence**)
Cold Emission (see **Electrical Properties**)
Colloids (see **Chemical Effects and Properties; Molecular Aggregates**)
Compton Effect (see **Radiation**)
Conductivity, Electrical (see **Electrical Conductivity and Resistance**)
Conductivity, Thermal (see **Thermal Properties**)
Constants, Standards, Units
Cosmic Radiation (see also **Mesons and Hyperons**)
"Anomalous" scattering of μ mesons, Shuji Fukui, Takashi Kitamura, and Yuzuru Watase—315
Cosmic-ray increases associated with solar flares, L. C. Towle and J. A. Lockwood—641
Cosmic-ray latitude survey along 145° east longitude using airborne neutron monitor, J. R. Storey—297
Emission of heavy fragments in nuclear disintegrations, O. Skjeggestad and S. O. Sörensen—1115
Evidence against mass-500 particle, E. Bierman, R. Lea, J. Orear, and S. Rosendorff—710
Further evidence for variation in rate of dense air showers with solar time, C. B. A. McCusker, D. E. Page, and R. A. Reid—712
Geomagnetic measurements on heavy primary cosmic radiation near equator, Robert E. Danielson—1311
Ionization loss by μ mesons in He, Robert E. Lanou, Jr., and Henry L. Kraybill—657
Latitude dependence of Forbush-type cosmic-ray intensity decrease observed at aircraft altitude, J. R. Storey—302
Li, Be, and B in primary cosmic radiation, P. S. Freier, E. P. Ney, and C. J. Waddington—921
Point source of cosmic rays in Orion, Y. Sekido, S. Yoshida, and Y. Kamiya—1108
Variations in cosmic-ray rigidity spectrum, K. G. McCracken—343
Cosmology (see **Astrophysics; Relativity and Gravitation**)
Coulomb Excitation (see **Nuclear Reactions; Nuclear Spectra**)
Critical Potentials (see **Atomic Structure and Spectra; Molecular Structure and Spectra**)
Cross Section (see **Electrons and Positrons; Nuclear Reactions; Radiation; Scattering**)
Crystal Counters (see **Methods and Instruments**)
Crystalline State (see also **Electrical Properties; Imperfections in Solids; Magnetic Properties; Semiconductors; etc.**)
Acoustoelectric effect, R. H. Parmenter—102
Calculation of migration and binding energies of mono-, di-, and trivacancies in Cu with use of Morse function, A. C. Damask, G. J. Dienes, and V. G. Weizer—781
Compton scattering of x-rays from Al, A. J. Freeman—176
Configuration coordinate model for KCl:Tl including spin-orbit interaction, F. E. Williams and P. D. Johnson—97
Dislocation energies in NaCl, H. B. Huntington, J. E. Dickey, and Robb Thomson—1696(E)
Domain structure of WO_3 single crystals, S. Sawada and G. C. Danielson—1005
Effect of pressure on anelastic relaxation in Ag-Zn, G. W. Tichelaar and D. Lazarus—438
Effective ionic charge in alkali halides, Jacque E. Hanlon and A. W. Lawson—472
Electron interaction in solids. Characteristic energy loss spectrum, P. Nozières and D. Pines—1254
Heat capacity of pseudo-Cu below 4.2°K, G. L. Guthrie—793
Influence of solutes on self-diffusion in fcc lattice, Howard Reiss—1445
Infrared properties of cubic SiC films, W. G. Spitzer, D. A. Kleinman, and C. J. Frosch—133
Infrared properties of hexagonal SiC, W. G. Spitzer, D. Kleinman, and D. Walsh—127
Lattice vibrations in Ge by scattering of cold neutrons, A. Ghose, H. Palevsky, D. J. Hughes, I. Pelah, and C. M. Eisenhauer—49
Mean adsorption lifetime of Rb on etched W single crystals. I. Ions, F. L. Hughes and H. Levinstein—1029; II. Neutrals—F. L. Hughes—1036
Metallic transition in LiH, Robert E. Behringer—787
Method of treating Zeeman splittings of paramagnetic ions in crystalline fields, G. F. Koster and H. Statz—445
Model for lattice thermal conductivity at low temperatures, Joseph Callaway—1046
Normal modes of Ge by neutron spectrometry, B. N. Brockhouse and P. K. Iyengar—1696(E)
Nuclear spin saturation by ultrasonics in NaCl, E. F. Taylor and N. Bloembergen—431
Optical spectrum of Co^{2+} in cubic crystalline field of CaF_2, R. Stahl-Brada and W. Low—775
Orientation dependence of elastic waves in single crystals, P. C. Waterman—1240
Quadrupolar nuclear spin-lattice relaxation in crystals with bcc lattice structure, T. P. Das, D. K. Roy, and S. K. Ghosh Roy—1696(E)
Sum rule for lattice vibrations in ionic crystals, R. Brout—43
Surface properties of etched W single crystals, F. L. Hughes, H. Levinstein, and R. Kaplan—1023
Theory of ultrasonic absorption in metals: collision-drag effect, T. Holstein—479
Theory of ultrasonic cyclotron resonance in metals at low temperatures, T. Kjeldaas, Jr.—1473
Transformations of Ising models, Michael E. Fisher—969
Vibration spectra and specific heats of diamond-type lattices, James C. Phillips—147

Diamagnetism (see **Magnetic Properties**)
Dielectrics and Dielectric Properties
Domain structure of WO_3 single crystals, S. Sawada and G. C. Danielson—1005
Effective ionic charge in alkali halides, Jacque E. Hanlon and A. W. Lawson—472
Electron interaction in solids. Characteristic energy loss spectrum, P. Nozières and D. Pines—1254
Infrared absorption of reduced rutile TiO_2 single crystals, D. C. Cronemeyer—1222
Motion of Mn^{++}-cation vacancy pairs in NaCl: study by electron spin resonance and dielectric loss, George D. Watkins—91
Optical indices of refraction of WO_3, S. Sawada and G. C. Danielson—1008
Radiation damage effects in ferroelectric triglycine sulfate, A. G. Chynoweth—159
Temperature dependence of breakdown field of $BaTiO_3$, P. H. Fang and W. S. Brower—456
Diffraction (see also **Scattering**)
Neutron diffraction investigations of magnetic ordering in $FeBr_2$, $CoBr_2$, $FeCl_2$, and $CoCl_2$, M. K. Wilkinson, J. W. Cable, E. O. Wollan, and W. C. Koehler—497
Normal modes of Ge by neutron spectrometry, B. N. Brockhouse and P. K. Iyengar—1696(E)
Diffusion
Influence of solutes on self-diffusion in fcc lattice, Howard Reiss—1445
Measurements of dissociative recombination and diffusion in N_2 at low pressures, A. C. Faire and K. S. W. Champion—1
Discharge of Electricity in Gases (see **Electrical Discharges**)

Disintegration and Excitation of Nucleus (see **Nuclear Reactions**)
Dynamics (see **Mechanics**)

Elasticity and Plasticity
Effect of pressure on anelastic relaxation in Ag-Zn, G. W. Tichelaar and D. Lazarus—438
Elastic constants of InSb from 4.2°K to 300°K, L. J. Slutsky and C. W. Garland—167
Orientation dependence of elastic waves in single crystals, P. C. Waterman—1240
Electrical Breakdown (see **Dielectrics and Dielectric Properties; Electrical Discharges**)
Electrical Conductivity and Resistance (see also **Electrical Properties; Semiconductors; Superconductors**)
Conductivity of grain boundaries in grown Ge bicrystals, B. Reed, O. A. Weinreich, and H. F. Mataré—454
Effect of thickness of thin films of PbS on spectral response of photoconductivity, H. E. Spencer—1417
Electrical conduction in crystals and ceramics of WO_3, S. Sawada and G. C. Danielson—803
Hall effect for electrons in AgCl, Koichi Kobayashi and Frederick C. Brown—507
Low-temperature electrical and magnetic behavior of dilute alloys: Mn in Cu and Co in Cu, I. S. Jacobs and R. W. Schmitt—459
Low-temperature luminescence and photoconductivity of AgCl, Donald A. Wiegand—52
Photoconductor-performance, space-charge currents, and steady-state Fermi level, A. Rose and M. A. Lampert—1227
Transient behavior of ohmic contact, M. A. Lampert and A. Rose—1236
Electrical Discharges
Conductivity of plasmas to microwaves, P. H. Fang—13
Electron recombination in atomic hydrogen, R. G. Fowler and W. R. Atkinson—1268
Measurements of dissociative recombination and diffusion in N_2 at low pressures, A. C. Faire and K. S. W. Champion—1
Nonlinear electron oscillations in cold plasma, John W. Dawson—383
Significance of formative time lags in gaseous breakdown, Leonard B. Loeb—7
Trajectory-wise analysis of cylindrical and plane plasmas in magnetic field and without collisions, Lewi Tonks—400
Electrical Properties (see also **Dielectrics and Dielectric Properties; Electrical Conductivity and Resistance; Semiconductors; Superconductors**)
Anomalous photovoltaic effect in ZnS single crystals, A. Lempicki—1204
Exciton-induced photoemission from BaO near 80°K, E. Taft, H. Philipp, and L. Apker—156
Experimental measurement of total-energy distribution of field-emitted electrons, Russel D. Young and Erwin W. Müller—115
Photoelectric effects in certain of alkali halides in vacuum uv, John W. Taylor and Paul L. Hartman—1421
Theoretical total-energy distribution of field-emitted electrons, Russel D. Young—110
Transient behavior of ohmic contact, M. A. Lampert and A. Rose—1236
Two electrical phenomena on liquid Ge surfaces, A. I. Bennett—773
Electrodynamics (see **Electromagnetic Theory and Electrodynamics**)
Electroluminescence (see **Luminescence**)
Electrolysis (see **Chemical Effects and Properties**)
Electromagnetic Theory and Electrodynamics (see also **Microwaves**)
Formation of discontinuities in classical nonlinear electrodynamics, Morton Lutzky and John S. Toll—1649
Solution of Maxwell's equations in terms of spinor notation: direct and inverse problem, H. E. Moses—1670
Electron Diffraction (see **Diffraction; Scattering of Electrons and Positrons**)
Electron Optics (see **Electromagnetic Theory and Electrodynamics**)
Electronic Tubes (see **Methods and Instruments**)
Electrons and Positrons (see also **Electromagnetic Theory and Electrodynamics; Elementary Particle Interactions; Scattering of Electrons and Positrons**)
Effect of impurities on angular correlation of positron annihilation radiation, R. L. de Zafra—1547
Formation of positronium in electron gas, M. A. Bég and P. M. Stehle—1545
Electrons, Mobility (see **Ions and Electrons, Mobility**)
Electrons, Scattering of (see **Scattering of Electrons and Positrons**)
Electrons, Secondary (see **Electrical Properties**)
Electrons, Thermionic (see **Electrical Properties**)
Electro-Optical Effects (see **Optical Properties**)
Electrostriction (see **Dielectrics and Dielectric Properties**)
Elementary Particle Interactions, General
Evidence against mass-500 particle, E. Bierman, R. Lea, J. Orear, and S. Rosendorff—710
G-conjugation and group-space of proper Lorentz group, E. J. Schremp—936
Unstable particles as targets in scattering experiments, G. F. Chew and F. E. Low—1640
Elementary Particle Interactions, Electromagnetic
"Anomalous" scattering of μ mesons, Shuji Fukui, Takashi Kitamura, and Yuzuru Watase—315
Determination of pion-nucleon coupling constant from photoproduction angular distribution, John G. Taylor, Michael J. Moravcsik, and Jack L. Uretsky—689
Effect of electric dipole moment of proton on energy levels of H atom, R. M. Sternheimer—828
γ-ray correlation tests for time reversal invariance in nuclear forces, Boris A. Jacobsohn and Ernest M. Henley—234
Heavy-meson hyperon relative parity and sign of Coulomb interference in K^--p scattering, E. Galzenati and B. Vitale—1635
Higher electromagnetic corrections to electron-proton scattering, S. D. Drell and S. Fubini—741
Internal pairs in capture of π^- by protons, Ronald M. Rockmore and John G. Taylor—1697(E)
Multiple meson production by photons in hydrogen, J. M. Sellen, G. Cocconi, V. T. Cocconi, and E. L. Hart—1323
μ-meson decay with inner bremsstrahlung, C. Fronsdal and H. Überall—654
Nucleon form factors from electroproduction of pions, S. Gartenhaus and C. N. Lindner—917
Photoproduction of charged pions from deuterium, Robert H. Land—1141
Photoproduction of pion pairs in H, Michel Bloch and Matthew Sands—305
Photoproduction of positive pions in H in angular range $7° < \theta_{c.m.} < 27°$ and photon energy range 220 Mev $< k <$ 390 Mev, Alan J. Lazarus, W. K. H. Panofsky, and F. R. Tangherlini—1330
Pion spectrum in radiative $K_{\pi}{}^+$ decay, J. D. Good—352
Radiative capture of K-mesons from orbital P states of K-mesonic atoms, Graham Frye—688
Radiative corrections for nearly elastic scattering, E. L. Lomon—726
Radiative corrections to Fermi interactions, Toichiro Kinoshita and Alberto Sirlin—1652

Elementary Particle Interactions, Electromagnetic (Continued)
Radiative meson-nucleon scattering. II, R. E. Cutkosky—727
Scattering of polarized electrons by polarized nucleons, James H. Scofield—1599

Elementary Particle Interactions, Strong
Alternative method for comparing pion-proton scattering data with dispersion equations, Howard J. Schnitzer and George Salzman—1153
Antiproton-nucleon annihilation process. II, Owen Chamberlain, Gerson Goldhaber, Louis Jauneau, Theodore Kalogeropoulos, Emilio Segrè, and Rein Silberberg—1615
Decay of ${}_{\Lambda}H^{3}$ and spin dependence of Λ nucleon interaction, M. Leon—1604
Determination of pion-nucleon coupling constant from photoproduction angular distribution, John G. Taylor, Michael J. Moravcsik, and Jack L. Uretsky—689
Elastic p-p collisions at 6.2 Bev in nuclear emulsions, R. M. Kalbach, J. J. Lord, and C. H. Tsao—325
γ-ray correlation tests for time reversal invariance in nuclear forces, Boris A. Jacobsohn and Ernest M. Henley—234
General transformation of symmetrical pseudoscalar theory, A. Pais and R. Serber—955
Heavy-meson hyperon relative parity and sign of Coulomb interference in K^{-}-p scattering, E. Galzenati and B. Vitale—1635
High-energy maxima in π-p cross sections, Robert K. Adair—338
Hyperon-antihyperon production in nucleon-antinucleon collisions and relative Σ-Λ parity, Saul Barshay—349
Indication of K, Λ, Σ relative parities from effective range analysis of K^{+}-p scattering, D. Amati—1692
Inelastic p-p collisions at 6.2 Bev, R. M. Kalbach, J. J. Lord, and C. H. Tsao—330
Internal pairs in capture of π^{-} by protons, Ronald M. Rockmore and John G. Taylor—1697(E)
Multiple meson production by photons in hydrogen, J. M. Sellen, G. Cocconi, B. T. Cocconi, and E. L. Hart—1323
Nucleon-antinucleon scattering, James S. Ball and Jose R. Fulco—647
Nucleon form factors from electroproduction of pions, S. Gartenhaus and C. N. Lindner—917
Phase-shift analysis of p-p scattering experiments below 40 Mev, Malcolm H. MacGregor—1559
Photoproduction of charged pions from deuterium, Robert H. Land—1141
Photoproduction of pion pairs in H, Michel Bloch and Matthew Sands—305
Photoproduction of positive pions in H in angular range $7^{\circ}<\theta_{c.m.}<27^{\circ}$ and photon energy range 220 Mev $<k<390$ Mev, Alan J. Lazarus, W. K. H. Panofsky, and F. R. Tangherlini—1330
Pion-deuteron scattering in impulse approximation, Ronald M. Rockmore—1696(E)
p-p scattering at 19.8 Mev, Jack W. Burkig, J. Reginald Richardson, and Glen E. Schrank—290
Radiative capture of K mesons from orbital P states of K-mesonic atoms, Graham Frye—688
Radiative meson-nucleon scattering. II, R. E. Cutkosky—727
Scattering and annihilation of antihyperons by nucleons, D. B. Lichtenberg—1309
Small-angle p-p scattering at 20 Mev, Herbert N. Royden and Byron T. Wright—294
Structure of neutron, Katsumi Tanaka—714
Study of neutral pion production in p-p collisions, C. York, R. March, W. Kernan, and J. Fischer—1339
Symmetry laws and strong interactions, J. J. Sakurai—1679
Time reversal in nuclear interactions, Ernest M. Henley and Boris A. Jacobsohn—225
Unphysical region in heavy-meson nucleon dispersion relations, San Fu Tuan—1375
Ξ^{-} capture reactions in hydrogen, S. B. Treiman—355

Elementary Particle Interactions, Weak
Consequences of renormalizable weak interactions, S. Oneda and Y. Tanikawa—1354
Decay of hyperons and mesons from universal Fermi interaction, Akihiko Fujii and Masaaki Kawaguchi—1156
Decay of ${}_{\Lambda}H^{3}$ and spin dependence of Λ nucleon interaction, M. Leon—1604
Evidence for transition of K^{0} into $\bar{K}^{0}$ meson, Frank S. Crawford, Jr., Marcello Cresti, Myron L. Good, Klaus Gottstein, Ernest M. Lyman, Frank T. Solmitz, M. Lynn Stevenson, and Harold Ticho—1601
Fermi interaction caused by intermediary chiral boson, Yasutaka Tanikawa and Satosi Watanabe—1344
Free antineutrino absorption cross section. I. Measurement of free antineutrino absorption cross section by protons, Frederick Reines and Clyde L. Cowan, Jr.—273; II. Expected cross section from measurements of fission fragment electron spectrum, R. E. Carter, F. Reines, J. J. Wagner, and M. E. Wyman—280
μ-meson decay with inner bremsstrahlung, C. Fronsdal and H. Überall—654
Nuclear spin-electron-neutrino correlation in forbidden β decay, Adam M. Bincer—1697(E)
Pion spectrum in radiative $K_{\pi}{}^{+}$ decay, J. D. Good—352
Preliminary results on momentum dependence of asymmetry in muon decay, Hans Kruger and Kenneth M. Crowe—341
Radiative corrections to Fermi interactions, Toichiro Kinoshita and Alberto Sirlin—1652
Universal weak boson and fermion interaction, Masao Sugawara—1361
V-A theory and decay of Λ hyperon, S. Okubo, R. E. Marshak, and E. C. G. Sudarshan—944

Elements (see **Atomic Mass and Abundance**)
Energy Loss of Particles (see **Range and Energy Loss**)
Energy States of Atoms (see **Atomic Structure and Spectra**)
Energy States of Molecules (see **Molecular Structure and Spectra**)
Energy States of Nucleus (see **Nuclear Reactions; Nuclear Spectra; Nuclear Structure Theory**)
Equations of State (see **Chemical Effects and Properties**)

Errata
Dislocation energies in NaCl, H. B. Huntington, J. E. Dickey, and Robb Thomson—1696(E)
Internal pairs in capture of π^{-} by protons, Ronald M. Rockmore and John G. Taylor—1697(E)
Magnetization mechanism and domain structure of multidomain particles, Henri Amar—1697(E)
Normal modes of Ge by neutron spectrometry, B. N. Brockhouse and P. K. Iyengar—1696(E)
Nuclear spin-electron-neutrino correlation in forbidden β decay, Adam M. Bincer—1697(E)
Pion-deuteron scattering in impulse approximation, Ronald M. Rockmore—1696(E)
Quadrupolar nuclear spin-lattice relaxation in crystals with bcc lattice structure, T. P. Das, D. K. Roy, and S. K. Ghosh Roy—1696(E)
Revised Weizsäcker semiempirical formula for diffuse nuclear surfaces, William D. Gunter, Jr., and Robert A. Hubbs—1697(E)
Thermal excitations in liquid He^{3}, Louis Goldstein—1697(E)
Variational calculations of dipole polarizabilities of He-like ions, E. G. Wikner and T. P. Das—1696(E)

Errors of Measurement (see **Methods and Instruments**)
Evaporation (see **Liquids**)
Excitation of Atoms (see **Atomic Structure and Spectra**)
Excitation of Molecules (see **Molecular Structure and Spectra**)
Excitation of Nucleus (see **Nuclear Reactions; Nuclear Spectra; Nuclear Structure Theory**)
Explosion Phenomena (see **Fluid Dynamics**)

Faraday Effect (see **Optical Properties**)
Ferroelectric Phenomena (see **Dielectrics and Dielectric Properties**)
Ferromagnetism (see **Magnetic Properties**)
Field Emission (see **Electrical Properties**)
Field Theory (see also **Quantum Electrodynamics**)
Alternative method for comparing pion-proton scattering data with dispersion equations, Howard J. Schnitzer and George Salzman—1153
Application of linear network analysis to Feynman diagrams, Jon Mathews—381
Consequences of renormalizable weak interactions, S. Oneda and Y. Tanikawa—1354
Equations of motion of point particles in fields of nonzero rest mass and spin, Peter Havas—732
Fermi interaction caused by intermediary chiral boson, Yasutaka Tanikawa and Satosi Watanabe—1344
G-conjugation and group-space of proper Lorentz group, E. J. Schremp—936
General transformation of symmetrical pseudoscalar theory, A. Pais and R. Serber—955
Proof of dispersion relations for production of pions by real and virtual photons and for related processes, Reinhard Oehme and John G. Taylor—371
Soluble problem in dispersion theory, M. L. Goldberger and S. B. Treiman—1663
Structure of neutron, Katsumi Tanaka—714
Symmetry laws and strong interactions, J. J. Sakurai—1679
Theory of many-boson systems: pair theory, M. Girardeau and R. Arnowitt—755
Unitary irreducible representations of Lorentz group, Christian Fronsdal—1367
Universal weak boson and fermion interaction, Masao Sugawara—1361
Unphysical region in heavy-meson nucleon dispersion relations, San Fu Tuan—1375
Unstable particles as targets in scattering experiments, G. F. Chew and F. E. Low—1640

Films, Properties
Effect of thickness of thin films of PbS on spectral response of photoconductivity, H. E. Spencer—1417
Geometric dependence of magnetic anisotropy in thin Fe films, T. G. Knorr and R. W. Hoffman—1039
Infrared properties of cubic SiC films, W. G. Spitzer, D. A. Kleinman, and C. J. Frosch—133
Fine Structure (see **Atomic Structure and Spectra**)
Fission of Nucleus (see **Nuclear Fission**)
Fluctuation Phenomena (see **Noise**)
Fluid Dynamics
Nonlinear electron oscillations in cold plasma, John W. Dawson—383
Relativistic hydrodynamics for charged nonviscous fluid, Chau-Chin Wei—1414
Trajectory-wise analysis of cylindrical and plane plasmas in magnetic field and without collisions, Lewi Tonks—400
Fluorescence (see **Luminescence**)
Friction (see **Mechanics**)

Galvanomagnetic Effect (see **Magnetic Properties**)
Gamma Rays (see also **Nuclear Reactions; Nuclear Spectra; Radiation; Range and Energy Loss**)
Contribution of annihilation radiation to γ-ray flux in Pb, Martin J. Berger, John H. Hubbell, and Ida H. Reingold—857
Gases
Geophysics
Cosmic-ray increases associated with solar flares, L. C. Towle and J. A. Lockwood—641
Glasses (see **Molecular Aggregates**)
Gravitation (see **Relativity and Gravitation**)
Gyromagnetization (see **Magnetic Properties**)

Hall Effect (see **Electrical Conductivity and Resistance; Semiconductors**)
Heat Capacity (see **Thermal Properties**)
Heat Conduction (see **Thermal Properties**)
Heat of Dissociation and Formation (see **Molecular Structure and Spectra**)
Heat of Fusion (see **Thermal Properties**)
Heat of Vaporization (see **Thermal Properties**)
Helium, Liquid
Evaporation effects during superflow of liquid He II, K. R. Atkins, B. Rosenbaum, and H. Seki—751
Excitations in liquid He: neutron scattering measurements, J. L. Yarnell, G. P. Arnold, P. J. Bendt, and E. C. Kerr—1379
Excitations in liquid He: thermodynamic calculations, P. J. Bendt, R. D. Cowan, and J. L. Yarnell—1386
Low-temperature behavior of dilute Bose system of hard spheres. II. Nonequilibrium properties, T. D. Lee and C. N. Yang—1406
Sound velocity and adiabatic compressibility of liquid He^3, Henry L. Laquer, Stephen G. Sydoriak, and Thomas R. Roberts—417
Theory of many-boson systems: pair theory, M. Girardeau and R. Arnowitt—755
Thermal excitations in liquid He^3, Louis Goldstein—1697(E)
Third and fourth sound in liquid He II, K. R. Atkins—962
Velocity of sound in liquid He^3, K. R. Atkins and H. Flicker—959
High Voltage Tubes and Machines (see **Methods and Instruments**)
Hydrodynamics (see **Fluid Dynamics**)
Hyperfine Structure (see **Atomic Structure and Spectra; Molecular Structure and Spectra; Nuclear Moments and Spin**)
Hyperons (see **Mesons and Hyperons**)

Imperfections in Solids (see also **Crystalline State; Electrical Conductivity and Resistance; Luminescence; Semiconductors**)
Calculation of migration and binding energies of mono-, di-, and trivacancies in Cu with use of Morse function, A. C. Damask, G. J. Dienes, and V. G. Weizer—781
Dislocation energies in NaCl, H. B. Huntington, J. E. Dickey, and Robb Thomson—1696(E)
Effect of pressure on anelastic relaxation in Ag-Zn, G. W. Tichelaar and D. Lazarus—438
Effect of thermal pretreatment on thermoluminescence of KCl crystals, A. Halperin and M. Schlesinger—762
Electron spin resonance of Mn^{++} in alkali chlorides: association with vacancies and impurities, George D. Watkins—79
Energy levels in irradiated Ge, E. I. Blount—995
Infrared absorption of reduced rutile TiO_2 single crystals, D. C. Cronemeyer—1222
Lattice parameter changes in deuteron-irradiated Ge, R. O. Simmons—70
Length and resistivity changes in Ge upon low-temperature deuteron irradiation and annealing, Frederick L. Vook and R. W. Balluffi—62

Imperfections in Solids (Continued)
Motion of Mn^{++}-cation vacancy pairs in NaCl: study by electron spin resonance and dielectric loss, George D. Watkins—91
Photoconductor performance, space-charge currents, and steady-state Fermi level, A. Rose and M. A. Lampert—1227
Radiation damage effects in ferroelectric triglycine sulfate, A. G. Chynoweth—159
S vacancy mechanism in pure CdS, A. A. Vuylsteke and Y. T. Sihvonen—40
Some properties of green and red-green luminescing CdS, Y. T. Sihvonen, D. R. Boyd, and C. D. Woelke—965
Stored energy release in Cu following electron irradiation below 20°K, C. J. Meechan and A. Sosin—422
Structure of deuteron-irradiated Ge, Frederick L. Vook and R. W. Balluffi—72
Inelastic Scattering (see **Nuclear Reactions; Scattering**)
Instruments (see **Methods and Instruments**)
Internal Conversion (see **Nuclear Spectra**)
Ionization (see also **Electrical Discharges; Range and Energy Loss**)
Electron impact ionization of Ne, O, and N, M. J. Seaton—814
Ionization loss by μ mesons in He, Robert E. Lanou, Jr., and Henry L. Kraybill—657
Ionization of atomic O on electron impact, Wade L. Fite and R. T. Brackmann—815
Ionization Potentials of Atoms (see **Atomic Structure and Spectra**)
Ionization Potentials of Molecules (see **Molecular Structure and Spectra**)
Ionosphere (see **Geophysics**)
Ions (see also **Electrical Discharges**)
Formation of H^- ions by electron impact on H_2, G. J. Schulz—816
Total cross sections for multiple electron stripping in atomic collisions at energies to 100 kev, P. R. Jones, F. P. Ziemba, H. A. Moses, and E. Everhart—182
Variational calculations of dipole polarizabilities of He-like ions, E. G. Wikner and T. P. Das—1696(E)
Ions and Electrons, Mobility (see also **Semiconductors**)
Electron mobility in partially ionized atomic H, Mahendra Singh Sodha—1163
Hall effect for electrons in AgCl, Koichi Kobayashi and Frederick C. Brown—507
Isobars (see **Atomic Mass and Abundance**)
Isomers, Molecular (see **Molecular Structure and Spectra**)
Isomers, Nuclear (see **Nuclear Spectra**)
Isotopes (see **Atomic Mass and Abundance; Radioactivity**)

Kerr Effect (see **Optical Properties**)
Kinetic Theory of Gases (see **Gases**)

Liquid Helium (see **Helium, Liquid**)
Liquids
Energy distribution of neutrons scattered by liquid Pb, I. Pelah, W. L. Whittemore, and A. W. McReynolds—767
Two electrical phenomena on liquid Ge surfaces, A. I. Bennett—773
Luminescence
A phosphor with fluorescence larger than energy gap, Seymour P. Keller and George D. Pettit—785
ac-dc electroluminescence, W. A. Thornton—1187
Configuration coordinate model for KCl:Tl including spin-orbit interaction, F. E. Williams and P. D. Johnson—97
Effect of thermal pretreatment on thermoluminescence of KCl crystals, A. Halperin and M. Schlesinger—762
Electroluminescence in cuprous oxide, R. Frerichs and R. Handy—1191
Excitation spectra and temperature dependence of luminescence of ZnS single crystals, A. Halperin and H. Arbell—1216
K-series fluorescence yields of V, Mn, and Ne, W. F. Frey, R. E. Johnston, and J. I. Hopkins—1057
Low-temperature luminescence and photoconductivity of AgCl, Donald A. Wiegand—52
Relative pulse height of protons and electrons in KI(Tl), Paul Kienle and R. E. Segel—909
S vacancy mechanism in pure CdS, A. A. Vuylsteke and Y. T. Sihvonen—40
Some properties of green and red-green luminescing CdS, Y. T. Sihvonen, D. R. Boyd, and C. D. Woelke—965
Stimulated infrared emission from Sm centers in SrS phosphors, Seymour P. Keller—1415

Magnetic Fields (see **Electromagnetic Theory and Electrodynamics**)
Magnetic Properties
Effective ferrimagnetic resonance parameters with Gilbert-type relation terms, Roald K. Wangsness—771
Excitation of spin waves in antiferromagnet by uniform rf field, R. Orbach and P. Pincus—1213
Galvanomagnetic properties of Ga at low temperatures, J. Yahia and J. A. Marcus—137
Geometric dependence of magnetic anisotropy in thin Fe films, T. G. Knorr and R. W. Hoffman—1039
Low-temperature electrical and magnetic behavior of dilute alloys: Mn in Cu and Co in Cu, I. S. Jacobs and R. W. Schmitt—459
Magnetization mechanism and domain structure of multi-domain particles, Henri Amar—1697(E)
Method of treating Zeeman splittings of paramagnetic ions in crystalline fields, G. F. Koster and H. Statz—445
Neutron diffraction investigations of magnetic ordering in $FeBr_2$, $CoBr_2$, $FeCl_2$, and $CoCl_2$, M. K. Wilkinson, J. W. Cable, E. O. Wollan, and W. C. Koehler—497
Temperature dependence of anisotropy energy in antiferromagnets, P. Pincus—769
Transformations of Ising models, Michael E. Fisher—969
Magnetic Resonance (see also **Nuclear Moments and Spin**)
Acoustical absorption arising from molecular resonance in solids, Leonard Liebermann—1052
Effective ferrimagnetic resonance parameters with Gilbert-type relation terms, Roald K. Wangsness—771
Electron spin resonance in Ni-doped Ge, G. W. Ludwig and H. H. Woodbury—1014
Electron spin resonance of Mn^{++} in alkali chlorides: association with vacancies and impurities, George D. Watkins—79
Excitation of spin waves in antiferromagnet by uniform rf field, R. Orbach and P. Pincus—1213
Millimeter-wave paramagnetic resonance spectrum of ^6S state impurity (Fe^{+++}) in $MgWO_4$, Martin Peter—801
Motion of Mn^{++}-cation vacancy pairs in NaCl: study by electron spin resonance and dielectric loss, George D. Watkins—91
Multiple quantum transitions in nuclear resonance, Shaul Yatsiv—1522
Nuclear relaxation in Al, John J. Spokas and Charles P. Slichter—1462
Nuclear spin relaxation in normal and superconducting Al, L. C. Hebel and C. P. Slichter—1504
Nuclear spin saturation by ultrasonics in NaCl, E. F. Taylor and N. Bloembergen—431
Quadrupolar nuclear spin-lattice relaxation in crystals with bcc lattice structure, T. P. Das, D. K. Roy, and S. K. Ghosh Roy—1696(E)

Radiation damping in nuclear magnetic resonance, A. Szöke and S. Meiboom—585
Role of double quantum transitions in masers, Shaul Yatsiv—1538
Temperature dependence of anisotropy energy in antiferromagnets, P. Pincus—769
Theory of ultrasonic cyclotron resonance in metals at low temperatures, T. Kjeldaas, Jr.—1473
Magnetohydrodynamics (see **Fluid Dynamics**)
Magneto-Optical Effects (see **Optical Properties**)
Magnetoresistance (see **Electrical Conductivity and Resistance; Semiconductors**)
Magnetostriction (see **Magnetic Properties**)
Mass Defects (see **Atomic Mass and Abundance**)
Mass Spectroscopy (see **Atomic Mass and Abundance; Methods and Instruments**)
Mathematical Methods
Measurements (see **Methods and Instruments**)
Mechanics
Mechanics, Quantum—Atomic Structure and Spectra (see **Atomic Structure and Spectra**)
Mechanics, Quantum—General (see **Quantum Mechanics**)
Mechanics, Quantum—Molecular Structure and Spectra (see **Molecular Structure and Spectra**)
Mechanics, Quantum—Nuclear (see **Nuclear Structure Theory**)
Mechanics, Quantum—of Solid Bodies (see **Crystalline State**)
Mechanics, Statistical (see **Statistical Mechanics and Thermodynamics**)
Meson Field Theory (see **Field Theory**)
Mesons and Hyperons (see also **Cosmic Radiation; Elementary Particle Interactions; Nuclear Reactions Induced by Mesons and Hyperons; Scattering of Mesons and Hyperons**)
Capture and decay of μ^- in Fe, W. A. Barrett, F. E. Holmstrom, and J. W. Keuffel—661
Capture of negative muons by nuclei, J. C. Sens—679
Consequences of renormalizable weak interactions, S. Oneda and Y. Tanikawa—1354
Decay of hyperons and mesons from universal Fermi interaction, Akihiko Fujii and Masaaki Kawaguchi—1156
Decay of ${}_\Lambda H^3$ and spin dependence of Λ nucleon interaction, M. Leon—1604
Determination of pion-nucleon coupling constant from photoproduction angular distribution, John G. Taylor, Michael J. Moravcsik, and Jack L. Uretsky—689
Evidence against mass-500 particle, E. Bierman, R. Lea, J. Orear, and S. Rosendorff—710
Evidence for transition of K^0 into $\bar{K}^0$ meson, Frank S. Crawford, Jr., Marcello Cresti, Myron L. Good, Klaus Gottstein, Ernest M. Lyman, Frank T. Solmitz, M. Lynn Stevenson, and Harold Ticho—1601
Heavy meson hyperon relative parity and sign of Coulomb interference in K^--p scattering, E. Galzenati and B. Vitale—1635
Hyperon-antihyperon production in nucleon-antinucleon collisions and relative Σ-Λ parity, Saul Barshay—349
Indication for K, Λ, Σ relative parities from effective range analysis of K^+-p scattering, D. Amati—1692
Internal pairs in capture of π^- by protons, Ronald M. Rockmore and John G. Taylor—1697(E)
Ionization loss by μ mesons in He, Robert E. Lanou, Jr., and Henry L. Kraybill—657
Multiple meson production by photons in hydrogen, J. M. Sellen, G. Cocconi, V. T. Cocconi, and E. L. Hart—1323
μ-meson decay with inner bremsstrahlung, C. Fronsdal and H. Überall—654
Neutral K meson as particle mixture, William B. Fowler, Richard L. Lander, and Wilson M. Powell—928
Nucleon form factors from electroproduction of pions, S. Gartenhaus and C. N. Lindner—917
Photoproduction of charged π mesons from nuclei, John R. Waters—1133
Photoproduction of charged pions from deuterium, Robert H. Land—1141
Photoproduction of pion pairs in H, Michel Bloch and Matthew Sands—305
Photoproduction of positive pions in H in angular range $7° < \theta_{c.m.} < 27°$ and photon energy range 220 Mev $< k <$ 390 Mev, Alan J. Lazarus, W. K. H. Panofsky, and F. R. Tangherlini—1330
Pion spectrum in radiative $K_{\pi}{}^+$ decay, J. D. Good—352
Preliminary results on momentum dependence of asymmetry in muon decay, Hans Kruger and Kenneth M. Crowe—341
Proof of dispersion relations for production of pions by real and virtual photons and for related processes, Reinhard Oehme and John G. Taylor—371
Radiative capture of K mesons from orbital P states of K-mesonic atoms, Graham Frye—688
Radiative corrections to Fermi interactions, Toichiro Kinoshita and Alberto Sirlin—1652
Scattering and annihilation of antihyperons by nucleons, D. B. Lichtenberg—1309
Study of neutral pion production in p-p collisions, C. York, R. March, W. Kernan, and J. Fischer—1339
Universal weak boson and fermion interaction, Masao Sugawara—1361
V-A theory and decay of Λ hyperon, S. Okubo, R. E. Marshak, and E. C. G. Sudarshan—944
Ξ^- capture reactions in hydrogen, S. B. Treiman—355
Metals (see **Crystalline State**)
Metastable Atoms (see **Atomic Structure and Spectra**)
Metastable Molecules (see **Molecular Structure and Spectra**)
Meteorology (see **Geophysics**)
Methods and Instruments
Microwaves (see also **Atomic Structure and Spectra; Magnetic Resonance; Molecular Structure and Spectra; Nuclear Moments and Spin**)
Conductivity of plasmas to microwaves, P. H. Fang—13
Miscellaneous
Mobility of Ions and Electrons (see **Ions and Electrons, Mobility**)
Molecular Aggregates
Molecular Beams (see **Atomic and Molecular Beams**)
Molecular Structure and Spectra
Moments, Nuclear (see **Nuclear Moments and Spin**)
Moments of Molecules (see **Molecular Structure and Spectra**)
Muonium (see **Atomic Structure and Spectra; Mesons and Hyperons**)

Neutrinos and Antineutrinos (see also **Nuclear Spectra; Radioactivity**)
Free antineutrino absorption cross section. I. Measurement of free antineutrino absorption cross section by protons, Frederick Reines and Clyde L. Cowan, Jr.—273; II. Expected cross section from measurements of fission fragment electron spectrum, R. E. Carter, F. Reines, J. J. Wagner, and M. E. Wyman—280
Nuclear spin-electron-neutrino correlation in forbidden β decay, Adam M. Bincer—1697(E)
Neutron Diffraction (see **Diffraction; Scattering of Neutrons**)
Neutrons (see **Elementary Particle Interactions**)
Noise
Nuclear Fission
Determination of absolute neutron fission cross section of U^{235} by measurement of α, George J. Safford and Edward Melkonian—1285

Nuclear Fission (Continued)
Fission neutron spectrum and nuclear temperatures, James Terrell—527
Free antineutrino absorption cross section. I. Measurement of free antineutrino absorption cross section by protons, Frederick Reines and Clyde L. Cowan, Jr.—273; II. Expected cross section from measurements of fission fragment electron spectrum, R. E. Carter, F. Reines, J. J. Wagner, and M. E. Wyman—280
Hydrodynamic theory of spontaneous fission, W. D. Foland and R. D. Present—613
Ratio of asymmetric to symmetric fission of U^{233} as function of neutron energy, R. B. Regier, W. H. Burgus, and R. L. Tromp—1589

Nuclear Forces (see **Elementary Particle Interactions; Field Theory; Nuclear Structure Theory**)

Nuclear Induction (see **Magnetic Resonance; Nuclear Moments and Spin**)

Nuclear Isomers (see **Nuclear Spectra; Radioactivity**)

Nuclear Moments and Spin

Nuclear Photoeffects
Determination of pion-nucleon coupling constant from photoproduction angular distribution, John G. Taylor, Michael J. Moravcsik, and Jack L. Uretsky—689
Multiple meson production by photons in hydrogen, J. M. Sellen, G. Cocconi, V. T. Cocconi, and E. L. Hart—1323
Photoneutron cross sections of Li^6 and Li^7, T. A. Romanowski and V. H. Voelker—886
Photonuclear reactions of Ga and As with 70-Mev bremsstrahlung, Fritz D. Schupp, Clifford B. Colvin, and Don S. Martin, Jr.—1095
Photoproduction of charged π mesons from nuclei, John R. Waters—1133
Photoproduction of charged pions from deuterium, Robert H. Land—1141
Photoproduction of pion pairs in H, Michel Bloch and Matthew Sands—305
Photoproduction of positive pions in H in angular range $7° < \theta_{c.m.} < 27°$ and photon energy range 220 Mev $< k <$ 390 Mev, Alan J. Lazarus, W. K. H. Panofsky, and F. R. Tangherlini—1330
Proof of dispersion relations for production of pions by real and virtual photons and for related processes, Reinhard Oehme and John G. Taylor—371
Unphysical region in heavy-meson nucleon dispersion relations, San Fu Tuan—1375

Nuclear Reactions, General (see also **Elementary Particle Interactions; Scattering**)
Free antineutrino absorption cross section. I. Measurement of free antineutrino absorption cross section by protons, Frederick Reines and Clyde L. Cowan, Jr.—273; II. Expected cross section from measurements of fission fragment electron spectrum, R. E. Carter, F. Reines, J. J. Wagner, and M. E. Wyman—280
Nitrogen-induced nuclear reactions in potassium, J. J. Pinajian and M. L. Halbert—589
Nuclear reactions induced by nitrogen bombardment of sulfur, D. E. Fisher, A. Zucker, and A. Gropp—542
Time reversal in nuclear interactions, Ernest M. Henley and Boris A. Jacobsohn—225

Nuclear Reactions Induced by α Particles and He^3 (see also **Scattering of α Particles**)
Analysis of reaction $C^{13}(He^3,\alpha)C^{12}$, George E. Owen, L. Madansky, and Steve Edwards, Jr.—1575
$H^3(\alpha,\gamma)Li^7$ and $He^3(\alpha,\gamma)Be^7$ reactions, H. D. Holmgren and R. L. Johnston—1556
7.65-Mev state of C^{12}, S. F. Eccles and D. Bodansky—608
Study of levels in O^{18} through radiative capture of α particles by C^{14}, H. E. Gove and A. E. Litherland—1078

Nuclear Reactions Induced by Deuterons and Tritons (see also **Scattering of Deuterons and Tritons**)
Effect of mode mixtures on n-γ correlations from stripping reactions, Steve Edwards, Jr.—1277
Energy levels in F^{19} from $O^{18}(d,n\gamma)F^{19}$ reaction, J. W. Butler, L. W. Fagg, and H. D. Holmgren—268
Proton-γ angular correlation studies of Be^9 and $Ca^{40}(d,p\gamma)$ stripping reactions, R. T. Taylor—1293

Nuclear Reactions Induced by Mesons and Hyperons (see also **Elementary Particle Interactions; Mesons and Hyperons; Scattering of Mesons and Hyperons**)
Capture and decay of μ^- in Fe, W. A. Barrett, F. E. Holmstrom, and J. W. Keuffel—661
Capture of negative muons by nucleon, J. C. Sens—679
Decay of ${}_\Lambda H^3$ and spin dependence of Λ nucleon interaction, M. Leon—1604
Pion-deuteron scattering in impulse approximation, Ronald M. Rockmore—1696(E)
Radiative capture of K mesons from orbital P states of K-mesonic atoms, Graham Frye—688

Nuclear Reactions Induced by Neutrons (see also **Elementary Particle Interactions; Scattering of Neutrons**)
$C^{13}(n,p)B^{13}$ cross section for 14.9- to 17.5-Mev neutrons, William E. Kreger and Bernard D. Kern—890
Determination of absolute neutron fission cross section of U^{235} by measurement of α, George J. Safford and Edward Melkonian—1285
Effects of chemical binding on neutron cross section of hydrogen, W. L. Whittemore and A. W. McReynolds—806
Neutron-capture γ rays in Cl^{36}, R. E. Segel—844
(n,γ) cross sections of Na^{23}, I^{127}, and Au^{197}, S. J. Bame, Jr., and R. L. Cubitt—256
Optical model evidence for surface absorption of neutrons, Harvey J. Amster—911
Ratio of asymmetric to symmetric fission of U^{233} as function of neutron energy, R. B. Regier, W. H. Burgus, and R. L. Tromp—1589

Nuclear Reactions Induced by Protons (see also **Elementary Particle Interactions; Scattering of Protons**)
Antiproton-nucleon annihilation process. II, Owen Chamberlain, Gerson Goldhaber, Louis Jauneau, Theodore Kalogeropoulos, Emilio Segrè, and Rein Silberberg—1615
Breakup of deuterons by protons, L. Cranberg and R. K. Smith—587
High sensitivity mass spectrometric measurement of stable He and A isotopes produced by high-energy protons in Fe, Oliver A. Schaeffer and Josef Zähringer—674
Inelastic p-p collisions at 6.2 Bev, R. M. Kalbach, J. J. Lord, and C. H. Tsao—330
Inelastic proton scattering in medium-weight elements, Bernard L. Cohen and Allen G. Rubin—579
Inelastic scattering of protons by various nuclei, T. Tamura and D. C. Choudhury—552
Neutron thresholds in $V^{51}(p,n)Cr^{51}$, $Mn^{55}(p,n)Fe^{55}$, $Zn^{70}(p,n)Ga^{70}$, and $As^{75}(p,n)Se^{75}$ reactions, C. R. Gossett and J. W. Butler—246
p-n asymmetries at 143 Mev, Stuart G. Carpenter and Richard Wilson—650
Reaction $A^{40}(p,n)K^{40}$ and decay of K^{40}, R. E. Holland and F. J. Lynch—903
Study of Tl, Pb, and Bi nuclei produced in bombardment of Au with 380-Mev protons, Albert E. Metzger and J. M. Miller—1125

Nuclear Scattering (see **Scattering**)

Nuclear Spectra (see also **Nuclear Reactions; Radioactivity**)
Absence of isomerism in Ga^{65}, David L. Morrison and Norbert T. Porile—289
As^{74} decay, D. J. Horen, W. E. Meyerhof, J. J. Kraushaar, D. O. Wells, E. Brun, and J. E. Neighbor—875

Ba^{139} radiations, Wolfgang Henkes—863
Be^{11} β decay, D. H. Wilkinson and D. E. Alburger—563
β-γ correlations in first forbidden transition, Tsuneyuki Kotani and Marc Ross—622
Classification of energy levels of odd-mass nuclei in heavy-element region, F. S. Stephens, Frank Asaro, and I. Perlman—212
Coincidence studies in decay of Tb^{156} and Tb^{154}, R. W. Henry, L. T. Dillman, N. B. Gove, and R. A. Becker—1090
Coulomb corrections in theory of internal bremsstrahlung, Larry Spruch and Wallace Gold—1060
Decay of 13-hr Re^{182}, C. J. Gallagher, Jr., J. O. Newton, and Virginia S. Shirley—1298
Directional correlation of γ rays following decay of Eu^{152}, R. W. Lide and M. L. Wiedenbeck—840
Disintegration scheme of long-lived Al^{26}, Robert A. Rightmire, James R. Simanton, and Truman P. Kohman—1069
Fe^{52} and Fe^{53} disintegration, Jose O. Juliano, C. W. Kocher, T. D. Nainan, and Allan C. G. Mitchell—602
γ-ray correlation tests for time reversal invariance in nuclear forces, Boris A. Jacobsohn and Ernest M. Henley—234
Ge^{68} and Ga^{68} decay, Daniel J. Horen—572
Halogen delayed-neutron activities, Gilbert J. Perlow and Andrew F. Stehney—1269
Higher order corrections to allowed β decay, Masato Morita—1584
I^{124} and I^{123} disintegration, Allan C. G. Mitchell, Jose O. Juliano, Charles B. Creager, and C. W. Kocher—628
Inhibition of magnetic dipole radiation and identification of $T=1$ states in light, self-conjugate nuclei, E. K. Warburton—595
Nb^{92} decay, Harry I. West, Jr., Lloyd G. Mann, and Glen M. Iddings—881
Neutron-capture γ rays in Cl^{36}, R. E. Segel—844
Np^{241} decay, R. Vandenbosch—259
Nuclear spin-electron-neutrino correlation in forbidden β decay, Adam M. Bincer—1697(E)
Pm^{143} and Pm^{144} decay, Shimon Ofer—895
Reaction $A^{40}(p,n)K^{40}$ and decay of K^{40}, R. E. Holland and F. J. Lynch—903
Scintillation studies of some neutron-deficient isotopes of Lu, L. T. Dillman, R. W. Henry, N. B. Gove, and R. A. Becker—635
Se^{83} 25-min isomer, R. G. Cochran and W. W. Pratt—852
7.65-Mev state of C^{12}, S. F. Eccles and D. Bodansky—608
Sm^{145} and Pm^{145} decay schemes, A. R. Brosi, B. H. Ketelle, H. C. Thomas, and R. J. Kerr—239
Study of levels in O^{18} through radiative capture of α particles by C^{14}, H. E. Gove and A. E. Litherland—1078
Tb^{156} radiations, J. T. Holloway and L. Jackson Laslett—1581
Time reversal in nuclear interactions, Ernest M. Henley and Boris A. Jacobsohn—225
Zn^{68} disintegration scheme, G. I. Gleason—287

Nuclear Structure Theory (see also **Nuclear Reactions; Nuclear Spectra**)
α-decay barrier penetrabilities with exponential nuclear potential: even-even nuclei, John O. Rasmussen—1593
Classification of energy levels of odd-mass nuclei in heavy-element region, F. S. Stephens, Frank Asaro, and I. Perlman–212
Effective charge of neutrons in nuclei, A. de-Shalit—547
High-energy electron scattering and charge distribution of C^{12} and O^{16}, Hans F. Ehrenberg, Robert Hofstadter, Ulrich Meyer-Berkhout, D. G. Ravenhall, and Stanley E. Sobottka—666
Hydrodynamic theory of spontaneous fission, W. D. Foland and R. D. Present—613
Inhibition of magnetic dipole radiation and identification of $T=1$ states in light, self-conjugate nuclei, E. K. Warburton—595
Nuclear structure correction to hfs in hydrogen, C. K. Iddings and P. M. Platzman—192
Optical model evidence for surface absorption of neutrons, Harvey J. Amster—911
Revised Weizsäcker semiempirical formula for diffuse nuclear surfaces, William D. Gunter, Jr., and Robert A. Hubbs—252; 1697(E)
Simplified treatment for strong short-range repulsions in N-particle systems. I. General theory, John W. Clark and Eugene Feenberg—388
Spacing of nuclear energy levels, Lawrence Dresner—633

Optical Instruments (see **Methods and Instruments**)
Optical Properties (see also **Luminescence**)
Anomalous photovoltaic effect in ZnS single crystals, A. Lempicki—1204
Configuration coordinate model for KCl:Tl including spin-orbit interaction, F. E. Williams and P. D. Johnson—97
Domain structure of WO_3 single crystals, S. Sawada and G. C. Danielson—1005
Effect of pressure on infrared absorption of semiconductors, L. J. Neuringer—1495
Effect of thickness of thin films of PbS on spectral response of photoconductivity, H. E. Spencer—1417
Electron interaction in solids. Characteristic energy loss spectrum, P. Nozières and D. Pines—1254
Fundamental optical absorption in IIA-VIB compounds, George A. Saum and Eugene B. Hensley—1019
Infrared absorption of reduced rutile TiO_2 single crystals, D. C. Cronemeyer—1222
Infrared properties of cubic SiC films, W. G. Spitzer, D. A. Kleinman, and C. J. Frosch—133
Infrared properties of hexagonal SiC, W. G. Spitzer, D. Kleinman, and D. Walsh—127
Low-temperature luminescence and photoconductivity of AgCl, Donald A. Wiegand—52
$M_{2,3}$ emission band of Cu, D. E. Bedo and D. H. Tomboulian—464
Optical constants of Ge in region 1 to 10 ev, H. R. Philipp and E. A. Taft—1002
Optical indices of refraction of WO_3, S. Sawada and G. C. Danielson—1008
Optical spectrum of Co^{2+} in cubic crystalline field of CaF_2, R. Stahl-Brada and W. Low—775
Optical transmission of heat-treated $SrTiO_3$, H. W. Gandy—795
S vacancy mechanism in pure CdS, A. A. Vuylsteke and Y. T. Sihvonen—40
Stimulated infrared emission from Sm centers in SrS phosphors, Seymour P. Keller—1415
Zeeman-type magneto-optical studies of interband transitions in semiconductors, E. Burstein, G. S. Picus, R. F. Wallis, and F. Blatt—15

Pair Production (see **Electrons and Positrons**)
Parity (see **Elementary Particle Interactions; Field Theory; Nuclear Spectra**)
Phosphors and Phosphorescence (see **Luminescence; Semiconductors**)
Photoconductivity (see **Electrical Conductivity and Resistance**)
Photodisintegration (see **Nuclear Photoeffects**)
Photoelasticity (see **Elasticity and Plasticity**)
Photoelectric Effect (see **Electrical Properties**)
Photography and Photographic Emulsions (see **Methods and Instruments; Optical Properties**)
Photometry (see **Methods and Instruments; Optical Properties**)

Photons (see **Radiation**)
Photovoltaic Effect (see **Electrical Properties; Semiconductors**)
Piezoelectric Effect (see **Dielectrics and Dielectric Properties**)
Plasma Physics (see also **Crystalline State; Electrical Conductivity and Resistance; Electrical Discharges; Fluid Dynamics; Statistical Mechanics and Thermodynamics**)
Conductivity of plasmas to microwaves, P. H. Fang—13
Nonlinear electron oscillations in cold plasma, John W. Dawson—383
Trajectory-wise analysis of cylindrical and plane plasmas in magnetic field and without collisions, Lewi Tonks—400
Plasticity (see **Elasticity and Plasticity**)
Polarization, Electrical (see **Dielectrics and Dielectric Properties**)
Polymers (see **Molecular Aggregates**)
Positronium (see **Atomic Structure and Spectra; Electrons and Positrons**)
Positrons (see **Electrons and Positrons**)
Probability (see **Mathematical Methods**)
Protons (see **Elementary Particle Interactions**)

Quantum Electrodynamics (see also **Field Theory**)
Effect of electric dipole moment of proton on energy levels of H atom, R. M. Sternheimer—828
Higher electromagnetic corrections to electron-proton scattering, S. D. Drell and S. Fubini—741
Internal pairs in capture of π^- by protons, Ronald M. Rockmore and John G. Taylor—1697(E)
μ-meson decay with inner bremsstrahlung, C. Fronsdal and H. Überall—654
Nuclear structure correction to hfs in hydrogen, C. K. Iddings and P. M. Platzman—192
Nucleon form factors from electroproduction of pions, S. Gartenhaus and C. N. Lindner—917
Pion spectrum in radiative $K_{\pi}{}^+$ decay, J. D. Good—352
Radiative capture of K mesons from orbital P states of K-mesonic atoms, Graham Frye—688
Radiative corrections to Fermi interactions, Toichiro Kinoshita and Alberto Sirlin—1652
Radiative meson-nucleon scattering. II, R. E. Cutkosky—727
Relativistic K-shell photoeffect, Mihai Gavrila—514
Quantum Mechanics
Construction of Dirac equation central potential from phase shifts and bound states, Francisco Prats and John S. Toll—363
Quantum theory of gravitation: general formulation and linearized theory, R. Arnowitt and S. Deser—745
Representations of Dirac equation, S. K. Bose, A. Gamba, and E. C. G. Sudarshan—1661
Simplified treatment for strong short-range repulsions in N-particle systems. I. General theory, John W. Clark and Eugene Feenberg—388
Quenching of Radiation (see **Radiation**)

Radar (see **Methods and Instruments; Radiation**)
Radiation (see also **Gamma Rays; Range and Energy Loss; X-Rays**)
Effect of impurities on angular correlation of positron annihilation radiation, R. L. de Zafra—1547
General relation between fluxes from collimated point and plane sources of radiation, Martin J. Berger and Lewis V. Spencer—408
Radio Waves (see **Radiation**)
Radioactivity (see also **Nuclear Spectra**)
α-decay barrier penetrabilities with exponential nuclear potential: even-even nuclei, John O. Rasmussen—1593
Raman Spectra (see **Molecular Structure and Spectra**)
Range and Energy Loss (see also **Scattering**)
Electron interaction in solids. Characteristic energy loss spectrum, P. Nozières and D. Pines—1254
Ionization loss by μ mesons in He, Robert E. Lanou, Jr., and Henry L. Kraybill—657
Relative pulse height of protons and electrons in KI(Tl), Paul Kienle and R. E. Segel—909
Stopping of low-energy H^+ and He^+ ions in plastics, Donald C. Lorents and E. J. Zimmerman—1199
Recombination (see **Molecular Structure and Spectra**)
Rectifiers (see **Electrical Conductivity and Resistance; Semiconductors**)
Relativity and Gravitation
Covariant conservation laws in general relativity, Arthur Komar—934
Invariants of general relativity and classification of spaces, Louis Witten—357
Quantum theory of gravitation: general formulation and linearized theory, R. Arnowitt and S. Deser—745
Relativistic hydrodynamics for charged nonviscous fluid, Chau-Chin Wei—1414
Resistance, Electrical (see **Electrical Conductivity and Resistance**)
Resonance Radiation (see **Radiation**)

Scattering, General (see also **Diffraction; Elementary Particle Interactions; Nuclear Reactions; Range and Energy Loss**)
Coulomb scattering in very strong magnetic field, L. M. Tannenwald—1396
Radiative corrections for nearly elastic scattering, E. L. Lomon—726
Scattering of charged particles by neutral atoms, Marvin H. Mittleman and Kenneth M. Watson—198
Time reversal in nuclear interactions, Ernest M. Henley and Boris A. Jacobsohn—225
Total cross sections for multiple electron stripping in atomic collisions at energies to 100 kev, P. R. Jones, F. P. Ziemba, H. A. Moses, and E. Everhart—182
Unstable particles as targets in scattering experiments, G. F. Chew and F. E. Low—1640
Scattering of α Particles (see also **Nuclear Reactions Induced by α Particles and He^3**)
Scattering of Atoms and Molecules (see **Atomic and Molecular Beams**)
Scattering of Deuterons and Tritons (see also **Nuclear Reactions Induced by Deuterons and Tritons**)
Elastic scattering of 21.6-Mev deuterons, J. L. Yntema—261
Scattering of Electrons and Positrons (see also **Electrons and Positrons**)
Coulomb scattering in very strong magnetic field, L. M. Tannenwald—1396
Effect of recoil on elastic scattering of high-energy electrons by zero-spin nuclei, Leslie L. Foldy, Kenneth W. Ford, and Donald R. Yennie—1147
Electron impact ionization of Ne, O, and N, M. J. Seaton—814
Electron mobility in partially ionized atomic H, Mahendra Singh Sodha—1163
Electron recombination in atomic hydrogen, R. G. Fowler and W. R. Atkinson—1268
Electron scattering cross section with relativistic correction based on Thomas-Fermi theory, T. Tietz—1056
Formation of H^- ions by electron impact on H_2, G. J. Schulz—816
High-energy electron scattering and charge distribution of C^{12} and O^{16}, Hans F. Ehrenberg, Robert Hofstadter, Ulrich Meyer-Berkhout, D. G. Ravenhall, and Stanley E. Sobottka—666

Higher electromagnetic corrections to electron-proton scattering, S. D. Drell and S. Fubini—741
Ionization of atomic O on electron impact, Wade L. Fite and R. T. Brackmann—815
Radiative corrections for nearly elastic scattering, E. L. Lomon—726
Scattering of polarized electrons by polarized nucleons, James H. Scofield—1599

Scattering of Mesons and Hyperons (see also **Mesons and Hyperons; Nuclear Reactions Induced by Mesons and Hyperons**)
Alternative method for comparing pion-proton scattering data with dispersion equations, Howard J. Schnitzer and George Salzman—1153
"Anomalous" scattering of μ mesons, Shuji Fukui, Takashi Kitamura, and Yuzuru Watase—315
Elastic scattering of 150-Mev negative pions by nuclei, Tadao A. Fujii—695
Heavy-meson hyperon relative parity and sign of Coulomb interference in K^--p scattering, E. Galzenati and B. Vitale—1635
High-energy maxima in π-p cross sections, Robert K. Adair—338
Indication for K, Λ, Σ relative parities from effective range analysis of K^+-p scattering, D. Amati—1692
Optical model analysis of elastic scattering of 125-Mev K^+ mesons in nuclear emulsions, M. A. Melkanoff, O. R. Price, D. H. Stork, and H. K. Ticho—1303
Pion-deuteron scattering in impulse approximation, Ronald M. Rockmore—1696(E)
Radiative meson-nucleon scattering. II, R. E. Cutkosky—727
Scattering and annihilation of antihyperons by nucleons, D. B. Lichtenberg—1309

Scattering of Neutrons (see also **Nuclear Reactions Induced by Neutrons**)
Effects of chemical binding on neutron cross section of hydrogen, W. L. Whittemore and A. W. McReynolds—806
Energy distribution of neutrons scattered by liquid Pb, I. Pelah, W. L. Whittemore, and A. W. McReynolds—767
Excitations in liquid He: neutron scattering measurements, J. L. Yarnell, G. P. Arnold, P. J. Bendt, and E. C. Kerr—1379
Lattice vibrations in Ge by scattering of cold neutrons, A. Ghose, H. Palevsky, D. J. Hughes, I. Pelah, and C. M. Eisenhauer—49
Neutron diffraction investigations of magnetic ordering in $FeBr_2$, $CoBr_2$, $FeCl_2$, and $CoCl_2$, M. K. Wilkinson, J. W. Cable, E. O. Wollan, and W. C. Koehler—497
Nonelastic scattering cross section for 8–20 Mev neutrons, T. W. Bonner and J. C. Slattery—1088
Normal modes of Ge by neutron spectrometry, B. N. Brockhouse and P. K. Iyengar—1696(E)
Scattering of neutrons by nonspherical nuclei, H. M. Schey—900
Slow-neutron scattering by rotators, Howard C. Volkin—866

Scattering of Protons (see also **Nuclear Reactions Induced by Protons**)
Direct-interaction model calculations of high-energy proton-carbon scattering, Alan H. Cromer—1607
Elastic p-p collisions at 6.2 Bev in nuclear emulsions, R. M. Kalbach, J. J. Lord, and C. H. Tsao—325
Inelastic p-p collisions at 6.2 Bev, R. M. Kalbach, J. J. Lord, and C. H. Tsao—330
Inelastic proton scattering in medium-weight elements, Bernard L. Cohen and Allen G. Rubin—579
Inelastic scattering of protons by various nuclei, T. Tamura and D. C. Choudhury—552
Nucleon-antinucleon scattering, James S. Ball and Jose R. Fulco—647
Phase-shift analysis of p-p scattering experiments below 40 Mev, Malcolm H. MacGregor—1559
Polarization of scattered protons near 17 Mev, William A. Blanpied—1099
p-p scattering at 19.8 Mev, Jack W. Burkig, J. Reginald Richardson, and Glen E. Schrank—290
Small-angle p-p scattering at 20 Mev, Herbert N. Royden and Byron T. Wright—294

Scattering of Radiation (see **Gamma Rays; Radiation; X-Rays**)
Scintillation Counters (see **Methods and Instruments**)
Secondary Emission (see **Electrical Properties**)

Semiconductors
Conductivity of grain boundaries in grown Ge bicrystals, B. Reed, O. A. Weinreich, and H. F. Mataré—454
Effect of minority carriers on impurity conduction in p-type Ge, H. Fritzsche and K. Lark-Horovitz—999
Effect of pressure on infrared absorption of semiconductors, L. J. Neuringer—1495
Elastic constants of InSb from 4.2°K to 300°K, L. J. Slutsky and C. W. Garland—167
Electrical conduction in crystals and ceramics of WO_3, S. Sawada and G. C. Danielson—803
Electroluminescence in cuprous oxide, R. Frerichs and R. Handy—1191
Electron spin resonance in Ni-doped Ge, G. W. Ludwig and H. H. Woodbury—1014
Energy levels in irradiated Ge, E. I. Blount—995
Infrared absorption of reduced rutile TiO_2 single crystals, D. C. Cronemeyer—1222
Infrared properties of cubic SiC films, W. G. Spitzer, D. A. Kleinman, and C. J. Frosch—133
Infrared properties of hexagonal SiC, W. G. Spitzer, D. Kleinman, and D. Walsh—127
Lattice parameter changes in deuteron-irradiated Ge, R. O. Simmons—70
Length and resistivity changes in Ge upon low-temperature deuteron irradiation and annealing, Frederick L. Vook and R. W. Balluffi—62
Normal modes of Ge by neutron spectrometry, B. N. Brockhouse and P. K. Iyengar—1696(E)
Specific heat of Ge and Si at low temperatures, P. H. Keesom and G. Seidel—33
Structure of deuteron-irradiated Ge, Frederick L. Vook and R. W. Balluffi—72
Two electrical phenomena on liquid Ge surfaces, A. I. Bennett—773
Zeeman-type magneto-optical studies of interband transitions in semiconductors, E. Burstein, G. S. Picus, R. F. Wallis, and F. Blatt—15

Shock Waves (see **Fluid Dynamics**)
Solid State (see **Crystalline State**)
Solutions (see **Liquids**)
Sound (see **Acoustics**)
Spallation (see **Nuclear Reactions**)
Spark Discharge (see **Electrical Discharges**)
Specific Heat (see **Thermal Properties**)
Spectra, Atomic (see **Atomic Structure and Spectra**)
Spectra, General
Spectra, Molecular (see **Molecular Structure and Spectra**)
Spectra, Nuclear (see **Nuclear Spectra**)
Spectroscopy Technique (see **Methods and Instruments**)
Spinor Fields (see **Field Theory**)
Standards (see **Constants, Standards, Units**)
Stark Effect (see **Atomic Structure and Spectra**)

Statistical Mechanics and Thermodynamics
Classical fluctuation-relaxation theorem, Robert H. Kraichnan—1181
Excitations in liquid He: thermodynamic calculations, P. J. Bendt, R. D. Cowan, and J. L. Yarnell—1386
Low-temperature behavior of dilute Bose system of hard spheres. II. Nonequilibrium properties, T. D. Lee and C. N. Yang—1406
Many-body problem in quantum statistical mechanics. I. General formulation, T. D. Lee and C. N. Yang—1165
Simplified treatment for strong short-range repulsions in N-particle systems. I. General theory, John W. Clark and Eugene Feenberg—388
Statistical mechanics of strings, Nandor L. Balazs—1178
Theory of many-boson systems: pair theory, M. Girardeau and R. Arnowitt—755
Thermodynamics of inhomogeneous systems, Edward W. Hart—412
Statistical Methods (see **Mathematical Methods**)
Strange Particles (see **Elementary Particle Interactions; Mesons and Hyperons**)
Superconductivity
Effect of energy gap on penetration depth of superconductors, A. L. Schawlow and G. E. Devlin—120
Magnetic field dependence of surface impedance of superconducting Sn, M. Spiewak—1479
Nuclear spin relaxation in normal and superconducting Al, L. C. Hebel and C. P. Slichter—1504
Penetration depth in impure superconductors, Peter B. Miller—1209
Potential fluctuations in transition region to superconductivity, Hans Meissner—1183
Superconductivity of In_2Bi, R. E. Jones and W. B. Ittner —1520
Theory of thermal conductivity of superconductors, J. Bardeen, G. Rickayzen, and L. Tewordt—982
"Thin film" experiment with bulk superconductors, Hans Meissner and Richard Zdanis—1435
Supersonics (see **Fluid Dynamics**)

Thermal Conductivity (see **Thermal Properties**)
Thermal Diffusion (see **Diffusion**)
Thermal Expansion (see **Thermal Properties**)
Thermal Properties
Heat capacity of pseudo-Cu below 4.2°K, G. L. Guthrie—793
Model for lattice thermal conductivity at low temperatures, Joseph Callaway—1046
Specific heat of Ge and Si at low temperatures, P. H. Keesom and G. Seidel—33
Specific heats of some Cu-rich Cu-Ni alloys, G. L. Guthrie, S. A. Friedberg, and J. E. Goldman—45
Stored energy release in Cu following electron irradiation below 20°K, C. J. Meechan and A. Sosin—422
Theory of thermal conductivity of superconductors, J. Bardeen, G. Rickayzen, and L. Tewordt—982
Vibration spectra and specific heats of diamond-type lattices, James C. Phillips—147
Thermal Radiation (see **Radiation**)
Thermionic Emission (see **Electrical Properties**)
Thermodynamics (see **Statistical Mechanics and Thermodynamics**)
Thermoelectric Effect (see **Electrical Properties; Semiconductors**)
Thermoluminescence (see **Luminescence**)
Thermomagnetic Effect (see **Magnetic Properties**)
Total Cross Sections (see **Electrons and Positrons; Nuclear Reactions**)
Transmutation (see **Nuclear Reactions**)

Uncertainty Principle (see **Quantum Mechanics**)
Units (see **Constants, Standards, Units**)

Vacuum Tubes (see **Methods and Instruments**)
Van der Waals Forces (see **Molecular Structure and Spectra**)
Viscosity (see **Liquids**)

Wave Mechanics (see **Quantum Mechanics**)
Work Function (see **Electrical Properties**)

X-Rays
Compton scattering of x-rays from Al, A. J. Freeman—176
Compton scattering of x-rays from nonspherical charge distributions, A. J. Freeman–169
K-series fluorescence yields of V, Mn, and Ne, W. F. Frey, R. E. Johnston, and J. I. Hopkins—1057
$M_{2,3}$ emission band of Cu, D. E. Bedo and D. H. Tomboulian—464
X-ray absorption coefficients of elements with $Z=1$ to 17 for Mo $K\alpha$ radiation, R. B. Roof, Jr.—826
X-ray absorption coefficients of Th, U, and Pu—experimental determination and theoretical interpretation, R. B. Roof, Jr.—820
X-ray incoherent scattering function of atoms based on Thomas-Fermi theory, T. Tietz—1521
X-ray K-absorption spectra of solid A and Kr, Jack A. Soules and C. H. Shaw—470

Analytic Subject Index to Volume 114

References with (E) are to Errata. Items are listed under the following categories:

Acoustics
Astrophysics
Atomic and Molecular Beams
Atomic Mass and Abundance
Atomic Stucture and Spectra
Biophysics
Chemical Effects and Properties
Constants, Standards, Units
Cosmic Radiation
Crystalline State
Dielectrics and Dielectric Properties
Diffraction
Diffusion
Elasticity and Plasticity
Electrical Conductivity and Resistance
Electrical Discharges
Electrical Properties
Electromagnetic Theory and Electrodynamics
Electrons and Positrons
Elementary Particle Interactions, General
Elementary Particle Interactions, Electromagnetic
Elementary Particle Interactions, Strong
Elementary Particle Interactions, Weak
Errata
Field Theory
Films, Properties
Fluid Dynamics
Gamma Rays
Gases
Geophysics
Helium, Liquid
Imperfections in Solids
Ionization
Ions
Ions and Electrons, Mobility
Liquids
Luminescence
Magnetic Properties
Magnetic Resonance
Mathematical Methods
Mechanics
Mesons and Hyperons
Methods and Instruments
Microwaves
Miscellaneous
Molecular Aggregates
Molecular Structure and Spectra
Neutrinos and Antineutrinos
Noise
Nuclear Fission
Nuclear Moments and Spin
Nuclear Photoeffects
Nuclear Reactions, General
Nuclear Reactions Induced by α Particles and He^3
Nuclear Reactions Induced by Deuterons and Tritons
Nuclear Reactions Induced by Mesons and Hyperons
Nuclear Reactions Induced by Neutrons
Nuclear Reactions Induced by Protons
Nuclear Spectra
Nuclear Structure Theory
Optical Properties
Plasma Physics
Quantum Electrodynamics
Quantum Mechanics
Radiation
Radioactivity
Range and Energy Loss
Relativity and Gravitation
Scattering, General
Scattering of α Particles
Scattering of Deuterons and Tritons
Scattering of Electrons and Positrons
Scattering of Mesons and Hyperons
Scattering of Neutrons
Scattering of Protons
Semiconductors
Spectra, General
Statistical Mechanics and Thermodynamics
Superconductivity
Thermal Properties
X-Rays

Absorption of Radiation (see **Optical Properties; Radiation**)
Acoustics
Acoustoelectric effect in *n*-type Ge, Gabriel Weinreich, T. M. Sanders, Jr., and Harry G. White—33
Change in velocity of sound between normal and superconducting states in Sn, D. F. Gibbons and C. A. Renton—1257
Ultrasonic attenuation by electrons in metals, Eugene I. Blount—418
Adsorption (see **Gases**)
Aerodynamics (see **Fluid Dynamics**)
Afterglow (see **Electrical Discharges**)
Alloys (see **Crystalline State**)
Annihilation (see **Electrons and Positrons**)
Antiferroelectric Phenomena (see **Dielectrics and Dielectric Properties**)
Antiferromagnetism (see **Magnetic Properties**)
Antineutrinos (see **Neutrinos and Antineutrinos**)
Antineutrons (see **Elementary Particle Interactions**)
Antiprotons (see **Elementary Particle Interactions**)
Arcs (see **Electrical Discharges**)
Astrophysics
Atmosphere (see **Geophysics**)
Atomic and Molecular Beams
Nuclear spins of I^{128} and I^{130}, J. E. Sherwood and S. J. Ovenshine—858
Zeeman investigation of Cm^{242}, J. C. Hubbs, R. Marrus, and J. O. Winocur—586
Atomic Mass and Abundance
Nuclear energy levels and mass of N^{17}, C. S. Littlejohn—250
Atomic Structure and Spectra
Combined use of methods of superposition of configurations and correlation factor on ground states of He-like ions, Per-Olov Löwdin and Lajos Redei—752
Diffusion, de-excitation, and three-body collision coefficients for excited Ne atoms, A. V. Phelps—1011
Microwave Zeeman spectrum of atomic oxygen, H. E. Radford and V. W. Hughes—1274
Precision measurement of *K* x-ray spectrum of Hg, Olof Beckman and Pär Bergvall—1280
Zeeman investigation of Cm^{242}, J. C. Hubbs, R. Marrus, and J. O. Winocur—586
Auger Effect (see **Atomic Structure and Spectra; X-Rays**)
Aurora (see **Astrophysics; Geophysics**)

Barkhausen Effect (see **Magnetic Properties**)
Biophysics
Boson Theory (see **Field Theory**)
Bremsstrahlung (see **Radiation**)
Broadening of Spectral Lines (see **Atomic Structure and Spectra; Molecular Structure and Spectra; Spectra, General**)

Capture Cross Sections (see **Electrons and Positrons; Nuclear Reactions; Radiation**)
Čerenkov Effect (see **Radiation**)
Chemical Effects and Properties
Chemical reactions of positronium in aqueous solutions, J. McGervey and S. DeBenedetti—495
Chemical Reactions (see **Chemical Effects and Properties**)
Chemiluminescence (see **Luminescence**)
Cold Emission (see **Electrical Properties**)
Colloids (see **Chemical Effects and Properties; Molecular Aggregates**)
Compton Effect (see **Radiation**)

Conductivity, Electrical (see **Electrical Conductivity and Resistance**)
Conductivity, Thermal (see **Thermal Properties**)
Constants, Standards, Units
Cosmic Radiation (see also **Mesons and Hyperons**)
Flux and energy spectrum of cosmic-ray α particles during solar maximum, P. S. Freier, E. P. Ney, and C. J. Waddington—365
Mass-550 particle, M. Conversi, G. M. de Munari, A. Egidi, E. Fiorini, S. Ratti, C. Rubbia, C. Succi, and G. Torelli—1150
Cosmology (see **Astrophysics; Relativity and Gravitation**)
Coulomb Excitation (see **Nuclear Reactions; Nuclear Spectra**)
Critical Potentials (see **Atomic Structure and Spectra; Molecular Structure and Spectra**)
Cross Section (see **Electrons and Positrons; Nuclear Reactions; Radiation; Scattering**)
Crystal Counters (see **Methods and Instruments**)
Crystalline State (see also **Electrical Properties; Imperfections in Solids; Magnetic Properties; Semiconductors; etc.**)
Application of Morse potential function to cubic metals, L. A. Girifalco and V. G. Weizer—687
Coherent atomic scattering factors for LiH crystal field, R. P. Hurst—746
Crystal structure of He isotopes, Jerry Donohue—1009
Cyclotron absorption in metallic Bi and its alloys, J. K. Galt, W. A. Yager, F. R. Merritt, B. B. Cetlin, and A. D. Brailsford—1396
Deduction of volume dependence of cohesive energy of solids from shock-wave compression measurements, G. B. Benedek—467
Diffusion of Ru in single crystals of Ag, C. B. Pierce and D. Lazarus—686
Electron spin resonance experiments on donors in Si. I. Electronic structure of donors by electron nuclear double resonance, G. Feher—1219; II. Electron spin relaxation effects, G. Feher and E. A. Gere—1245
Exchange energy of electron gas in strong magnetic field, G. Dresselhaus—736
Excluded volume problem and Ising model of ferromagnetism, Michael E. Fisher and M. F. Sykes—45
Optical properties of Ni and W and their interpretation according to Drude's formula, S. Roberts—104
Optical properties of NiO, R. Newman and R. M. Chrenko—1507
Polarization of electron gas in metals by substitutional impurities, B. D. Silverman and P. R. Weiss—989
Pressure dependence of paramagnetic resonance spectra of two dilute Cr salts, Walter M. Walsh, Jr.—1485
Recovery of electron-irradiated Cu. I. Close pair recovery, J. W. Corbett, R. B. Smith, and R. M. Walker—1452; II. Interstitial migration, J. W. Corbett, R. B. Smith, and R. M. Walker—1460
Scattering of phonons by elastic strain fields and thermal resistance of dislocations, Peter Carruthers—995
Second low-temperature peak in internal friction of Al, Edward Lax and Daniel H. Filson—1273
Selection rules for dipole transitions in wurtzite structure, Joseph L. Birman—1490
Stark effect for cyclotron resonance in degenerate bands, J. C. Hensel and Martin Peter—411
Stress and temperature dependence of paramagnetic resonance spectrum of nickel fluosilicate, W. M. Walsh, Jr.—1473
Surface potential, field effect mobility, and surface conductivity of ZnO crystals, H. J. Krusemeyer—655
Symmetry of wurtzite, R. C. Casella—1514
Temperature dependence of electrical properties of Bi-Sb alloys, A. L. Jain—1518
Ultrasonic attenuation by electrons in metals, Eugene I. Blount—418
Diamagnetism (see **Magnetic Properties**)
Dielectrics and Dielectric Properties
Interaction of charged particles with degenerate Fermi-Dirac electron gas, R. H. Ritchie—644
$LiH_3(SeO_3)_2$: new room-temperature ferroelectric, R. Pepinsky and K. Vedam—1217
Study of ferroelectric transitions of solid-solution single crystals of $KNbO_3-KTaO_3$, S. Triebwasser—63
Diffraction (see also **Scattering**)
Crystal structure of He isotopes, Jerry Donohue—1009
Diffusion
Diffusion of Ru in single crystals of Ag, C. B. Pierce and D. Lazarus—686
Discharge of Electricity in Gases (see **Electrical Discharges**)
Disintegration and Excitation of Nucleus (see **Nuclear Reactions**)
Dynamics (see **Mechanics**)

Elasticity and Plasticity
Application of Morse potential function to cubic metals, L. A. Girifalco and V. G. Weizer—687
Deduction of volume dependence of cohesive energy of solids from shock-wave compression measurements, G. B. Benedek—467
Scattering of phonons by elastic strain fields and thermal resistance of dislocations, Peter Carruthers—995
Electrical Breakdown (see **Dielectrics and Dielectric Properties; Electrical Discharges**)
Electrical Conductivity and Resistance (see also **Electrical Properties; Semiconductors; Superconductors**)
Hall effect, resistivity, and magnetoresistivity of Th, U, Zr, Ti, and Nb, Ted G. Berlincourt—969
Langevin equation and ac conductivity of non-Maxwellian plasmas, P. Molmud—29
Ordinary Hall effect in Fe_3O_4 and $(NiO)_{0.75}(FeO)_{0.25}(Fe_2O_3)$ at room temperature, Jerome M. Lavine—482
Electrical Discharges
Attachment of low-energy electrons in mixtures containing oxygen, G. S. Hurst and T. E. Bortner—116
Conductivity of plasma to microwaves, P. H. Fang—1652(E)
Diffusion, de-excitation, and three-body collision coefficients for excited Ne atoms, A. V. Phelps—1011
Kinetic equation for plasma with unsteady correlations, C. M. Tchen—394
Langevin equation and ac conductivity of non-Maxwellian plasmas, P. Molmud—29
Nature and role of ionizing potential space waves in glow-to-arc transitions, Russell George Westberg—1
Velocities of sputtered atoms, G. K. Wehner—1270
Electrical Properties (see also **Dielectrics and Dielectric Properties; Electrical Conductivity and Resistance; Semiconductors; Superconductors**)
Acoustoelectric effect in n-type Ge, Gabriel Weinreich, T. M. Sanders, Jr., and Harry G. White—33
Electron bombardment of Si, D. E. Hill—1414
Slow capture of holes and electrons by surface states on Ge and Si at low temperatures, S. Roy Morrison—437
Surface potential, field effect mobility, and surface conductivity of ZnO crystals, H. J. Krusemeyer—655
Temperature dependence of electrical properties of Bi-Sb alloys, A. L. Jain—1518
Temperature dependence of work function of Ag, Na, and K, C. R. Crowell and R. A. Armstrong—1500
Transport properties on nondegenerate n-type semiconductors considering electron-electron scattering, M. S. Sodha and Y. P. Varshni—717
Electrodynamics (see **Electromagnetic Theory and Electrodynamics**)
Electroluminescence (see **Luminescence**)
Electrolysis (see **Chemical Effects and Properties**)

Electromagnetic Theory and Electrodynamics (see also **Microwaves**)
Behavior of intense relativistic electron beams, Richard H. Capps—1203
Geometrical significance of Einstein-Maxwell equations, Gerald Rosen—1179
Self-consistent field of single-type electrons in uniform magnetic field, Lewi Tonks—637
Stable orbits of charged particles in oscillating electromagnetic field, Erich S. Weibel—18
Electron Diffraction (see **Diffraction; Scattering of Electrons and Positrons**)
Electron Optics (see **Electromagnetic Theory and Electrodynamics**)
Electronic Tubes (see **Methods and Instruments**)
Electrons and Positrons (see also **Electromagnetic Theory and Electrodynamics; Elementary Particle Interactions; Scattering of Electrons and Positrons**)
Behavior of intense relativistic electron beams, Richard H. Capps—1203
Chemical reactions of positronium in aqueous solutions. J. McGervey and S. DeBenedetti—495
Photon and electron polarization in high-energy bremsstrahlung and pair production with screening, Haakon Olsen and L. C. Maximon—887
Tridents, μ pairs, and quantum electrodynamics at small distances, J. D. Bjorken and S. D. Drell—1368
Electrons, Mobility (see **Ions and Electrons, Mobility**)
Electrons, Scattering of (see **Scattering of Electrons and Positrons**)
Electrons, Secondary (see **Electrical Properties**)
Electrons, Thermionic (see **Electrical Properties**)
Electro-Optical Effects (see **Optical Properties**)
Electrostriction (see **Dielectrics and Dielectric Properties**)
Elementary Particle Interactions, General
Electric polarizability of neutron, G. Breit and M. L. Rustgi—830
Elementary particles in finite world geometry, H. R. Coish—383
Mass-550 particle, M. Conversi, G. M. de Munari, A. Egidi, E. Fiorini, S. Ratti, C. Rubbia, C. Succi, and G. Torelli—1150
Mass of charged Σ hyperons, M. S. Swami—333
Polarizability of neutron, R. M. Thaler—827
Spectral representations in perturbation theory. II. Two-particle scattering, Robert Karplus, Charles M. Sommerfield, and Eyvind H. Wichmann—376
Elementary Particle Interactions, Electromagnetic
Angular distributions of photopions from H, Edward A. Knapp, Robert W. Kenney, and Victor Perez-Mendez—605
Charge radius of pion, Riazuddin—1184
Coulomb effects in boson emission, Michael J. Moravcsik—621
Experimental determination of nonmagnetic neutron-electron interaction, E. Melkonian, B. M. Rustad, and W. W. Havens, Jr.—1571
Inner bremsstrahlung in hyperon decays, S. Barshay and R. E. Behrends—931
Note on photodisintegration of deuteron, W. Zernik, M. L. Rustgi, and G. Breit—1358
Photoproduction of K mesons and K-hyperon parities, Richard H. Capps—920
Scattering of electrons with intrinsic electric dipole moment, B. Margolis, S. Rosendorff, and A. Sirlin—1530
Search for Dirac monopoles, Hugh Bradner and William M. Isbell—603
Tridents, μ pairs, and quantum electrodynamics at small distances, J. D. Bjorken and S. D. Drell—1368
$\Xi^- - \Xi^0$ mass differences, J. J. Sakurai—1152
Elementary Particle Interactions, Strong
Analysis of Λ-hypernuclear three-body systems, B. W. Downs and R. H. Dalitz—593
Angular distributions of photopions from H, Edward A. Knapp, Robert W. Kenney, and Victor Perez-Mendez—605
Charge radius of pion, Riazuddin—1184
Dispersion relations for p-n scattering, J. Hamilton—1170
Effective mean free path of antinucleons in nuclear matter, Jose R. Fulco—374
Experimental determination of nonmagnetic neutron-electron interaction, E. Melkonian, B. M. Rustad, and W. W. Havens, Jr.—1571
Finite-range δ-function potential, M. Bolsterli—1605
Fixed angle dispersion relations for nucleon-nucleon scattering, M. Cini, S. Fubini, and A. Stanghellini—1633
Hyperon-nucleon scattering and reaction cross sections, Fabio Ferrari and Luciano Fonda—874
Modified analysis of nucleon-nucleon scattering. I. Theory and p-p scattering at 310 Mev, Peter Cziffra, Malcolm H. MacGregor, Michael J. Moravcsik, and Henry P. Stapp—880
Neutron-proton capture cross section, Robert W. Stooksberry and Marshall F. Crouch—1561
Note on photodisintegration of deuteron, W. Zernik, M. L. Rustgi, and G. Breit—1358
Positive pion production in p-p collisions at 450 Mev, Lee G. Pondrom—1623
p-p scattering from 1.4 to 2.4 Mev, David J. Knecht, S. Messelt, E. D. Berners, and L. C. Northcliffe—550
Space-time properties and internal symmetries of strong interactions, Gerald Feinberg and Feza Gürsey—1153
Total cross section for n-p scattering at 20 Mev, R. B. Day, R. L. Mills, J. E. Perry, Jr., and F. Scherb—209
Elementary Particle Interactions, Weak
Asymmetry in decay of Σ hyperons, R. L. Cool, Bruce Cork, James W. Cronin, and William A. Wenzel—912
Cloud-chamber measurement of half-life of neutron, N. D'Angelo—285
Decay of cascade particles, W. B. Teutsch, S. Okubo, and E. C. G. Sudarshan—1148
Decay of Co^{56} and Mn^{56}, P. Kienle and R. E. Segel—1554
Decay of hyperons and mesons from universal Fermi interaction, Akihiko Fujii and Masaaki Kawaguchi—1652(E)
Decay of $I^{130} \rightarrow Xe^{130}$, W. G. Smith, P. H. Stelson, and F. K. McGowan—1345
Decay of Zn^{61}, James B. Cumming—1600
Deviation from ξ approximation in first forbidden β decay, Tsuneyuki Kotani—795
Formulas of allowed β decay, Masato Morita—1080
Hyperfine splitting effects in capture of polarized μ^- mesons, H. Überall—1640
Inner bremsstrahlung in hyperon decays, S. Barshay and R. E. Behrends—931
$K_{\mu 2}$ decay and leptonic decay of hyperons, B. Sakita—1650
Lifetimes and decay spectra of τ'^+ and $K_{\mu 3}^+$, S. Taylor, G. Harris, J. Orear, J. Lee, and P. Baumel—359
Longitudinal polarization of positrons from decay of O^{14}, J. B. Gerhart, F. H. Schmidt, H. Bichsel, and J. C. Hopkins—1095
Parity of K meson and Λ β-decay branching ratio, C. H. Albright—1648
Positron spectrum from decay of μ meson, Walter F. Dudziak, Ryokichi Sagane, and James Vedder—336
Ratio of Gamow-Teller and Fermi coupling constants determined from ft values, O. C. Kistner and B. M. Rustad—1329
Study of K capture-positron ratio of transition $I^{126}(2-) \rightarrow Te^{126}(2+)$, D. S. Harmer and M. L. Perlman—1133

Elementary Particle Interactions, Weak (Continued)
Study of θ_1^0 production and decay by observation of its neutral decay mode, John E. Osher, Burton J. Moyer, and Sherwood I. Parker—612
Up-down asymmetries of Σ and Λ decays, B. d'Espagnat and J. Prentki—1366
0− to 0+ β transition $Pr^{144} \rightarrow Nd^{144}$, Fred T. Porter and Paul P. Day—1286
Elements (see **Atomic Mass and Abundance**)
Energy Loss of Particles (see **Range and Energy Loss**)
Energy States of Atoms (see **Atomic Structure and Spectra**)
Energy States of Molecules (see **Molecular Structure and Spectra**)
Energy States of Nucleus (see **Nuclear Reactions; Nuclear Spectra; Nuclear Structure Theory**)
Equations of State (see **Chemical Effects and Properties**)
Errata
Conductivity of plasma to microwaves, P. H. Fang—1652(E)
Decay of hyperons and mesons from universal Fermi interaction, Akihiko Fujii and Masaaki Kawaguchi—1652(E)
Decay of Nb^{93}, Harry I. West, Jr., Lloyd G. Mann, and Glen M. Iddings—1652(E)
Photodetachment of O_3^-, D. S. Burch, S. J. Smith, and L. M. Branscomb—1652(E)
Two new promethium isotopes; cross sections of some Sm isotopes for 14.8-Mev neutrons, R. G. Wille and R. W. Fink—1652(E)
Errors of Measurement (see **Methods and Instruments**)
Evaporation (see **Liquids**)
Excitation of Atoms (see **Atomic Structure and Spectra**)
Excitation of Molecules (see **Molecular Structure and Spectra**)
Excitation of Nucleus (see **Nuclear Reactions; Nuclear Spectra; Nuclear Structure Theory**)
Explosion Phenomena (see **Fluid Dynamics**)

Faraday Effect (see **Optical Properties**)
Ferroelectric Phenomena (see **Dielectrics and Dielectric Properties**)
Ferromagnetism (see **Magnetic Properties**)
Field Emission (see **Electrical Properties**)
Field Theory (see also **Quantum Electrodynamics**)
Dispersion relations for p-n scattering, J. Hamilton—1170
Fixed angle dispersion relations for nucleon-nucleon scattering, M. Cini, S. Fubini, and A. Stanghellini—1633
Q-number modification of Lorentz rotations, V. Rojansky—634
Space-time properties and internal symmetries of strong interactions, Gerald Feinberg and Feza Gürsey—1153
Spectral representations in perturbation theory. II. Two-particle scattering, Robert Karplus, Charles M. Sommerfield, and Eyvind H. Wichmann—376
$\Xi^- - \Xi^0$ mass differences, J. J. Sakurai—1152
Films, Properties
Fine Structure (see **Atomic Structure and Spectra**)
Fission of Nucleus (see **Nuclear Fission**)
Fluctuation Phenomena (see **Noise**)
Fluid Dynamics
Fluorescence (see **Luminescence**)
Friction (see **Mechanics**)

Galvanomagnetic Effect (see **Magnetic Properties**)
Gamma Rays (see also **Nuclear Reactions; Nuclear Spectra; Radiation; Range and Energy Loss**)
Gases
Geophysics
Glasses (see **Molecular Aggregates**)
Gravitation (see **Relativity and Gravitation**)
Gyromagnetization (see **Magnetic Properties**)

Hall Effect (see **Electrical Conductivity and Resistance; Semiconductors**)
Heat Capacity (see **Thermal Properties**)
Heat Conduction (see **Thermal Properties**)
Heat of Dissociation and Formation (see **Molecular Structure and Spectra**)
Heat of Fusion (see **Thermal Properties**)
Heat of Vaporization (see **Thermal Properties**)
Helium, Liquid
Landau's model of liquid He^3, Tunemaru Usui—21
High-Voltage Tubes and Machines (see **Methods and Instruments**)
Hydrodynamics (see **Fluid Dynamics**)
Hyperfine Structure (see **Atomic Structure and Spectra; Molecular Structure and Spectra; Nuclear Moments and Spin**)
Hyperons (see **Mesons and Hyperons**)

Imperfections in Solids (see also **Crystalline State; Electrical Conductivity and Resistance; Luminescence; Semiconductors**)
Electron bombardment of Si, D. E. Hill—1414
Excitation of luminescent materials by ionizing radiation, H. Kallmann and J. Dresner—71
Impurity scattering in superconductors, H. Suhl and B. T. Matthias—977
Lifetimes and capture cross sections in Au-doped Si, W. D. Davis—1006
Recovery of electron-irradiated Cu. I. Close pair recovery, J. W. Corbett, R. B. Smith, and R. M. Walker—1452; II. Interstitial migration, J. W. Corbett, R. B. Smith, and R. M. Walker—1460
Scattering of phonons by elastic strain fields and thermal resistance of dislocations, Peter Carruthers—995
Second low-temperature peak in internal friction of Al, Edward Lax and Daniel H. Filson—1273
Thermoluminescence and F centers. I. Theory, G. Bonfiglioli, P. Brovetto, and C. Cortese—951; II. Experimental, G. Bonfiglioli, P. Brovetto, and C. Cortese—956
Inelastic Scattering (see **Nuclear Reactions; Scattering**)
Instruments (see **Methods and Instruments**)
Internal Conversion (see **Nuclear Spectra**)
Ionization (see also **Electrical Discharges; Range and Energy Loss**)
Ionization produced by atomic collisions at kev energies. II, A. Russek and M. Tom Thomas—1538
Ionization Potentials of Atoms (see **Atomic Structure and Spectra**)
Ionization Potentials of Molecules (see **Molecular Structure and Spectra**)
Ionosphere (see **Geophysics**)
Ions (see also **Electrical Discharges**)
Combined use of methods of superposition of configurations and correlation factor on ground states of He-like ions, Per-Olov Löwdin and Lajos Redei—752
Diffusion, de-excitation, and three-body collision coefficients for excited Ne atoms, A. V. Phelps—1011
Ion confinement by rotation in magnetic mirror geometry, C. L. Longmire, D. E. Nagle, and F. L. Ribe—1187
Photodetachment of O_2^-, D. S. Burch, S. J. Smith, and L. M. Branscomb—1652(E)
Ions and Electrons, Mobility (see also **Semiconductors**)
Conductivity of plasma to microwaves, P. H. Fang—1652(E)
Dependence of electron mobility on magnetic field in fully ionized gas, M. S. Sodha and Y. P. Varshni—946
Low-field mobilities of negative ions in O_2, SF_6, SO_2, and HCl, E. W. McDaniel and M. R. C. McDowell—1028
Microwave field dependence of drift mobility in Ge, Karlheinz Seeger—476
Mobility of H ions (H^+, H_2^+, H_3^+) in H_2, Edward A. Mason and Joseph T. Vanderslice—497

Isobars (see **Atomic Mass and Abundance**)
Isomers, Molecular (see **Molecular Structure and Spectra**)
Isomers, Nuclear (see **Nuclear Spectra**)
Isotopes (see **Atomic Mass and Abundance; Radioactivity**)

Kerr Effect (see **Optical Properties**)
Kinetic Theory of Gases (see **Gases**)

Liquid Helium (see **Helium, Liquid**)
Liquids
Luminescence
Electroluminescence of AlN, G. A. Wolff, I. Adams, and J. W. Mellichamp—1262
Excitation of luminescent materials by ionizing radiation, H. Kallmann and J. Dresner—71
Pressure effects in luminescence: isobaric experiments on NaI(Tl), L. Reiffel—1493
Thermoluminescence and F centers. I. Theory, G. Bonfiglioli, P. Brovetto, and C. Cortese—951; II. Experimental, G. Bonfiglioli, P. Brovetto, and C. Cortese—956

Magnetic Fields (see **Electromagnetic Theory and Electrodynamics**)
Magnetic Properties
Exchange energy of electron gas in strong magnetic field, G. Dresselhaus—736
Excluded volume problem and Ising model of ferromagnetism, Michael E. Fisher and M. F. Sykes—45
Identification of magnetostatic modes of ferrimagnetic resonance spheres, P. Fletcher, I. H. Solt, Jr., and R. Bell—739
Transitions from ferromagnetism to antiferromagnetism in Fe-Al alloys: experimental results, Anthony Arrott and Hiroshi Sato—1320
Transitions from ferromagnetism to antiferromagnetism in Fe-Al alloys: theoretical interpretation, Hiroshi Sato and Anthony Arrott—1427
Magnetic Resonance (see also **Nuclear Moments and Spin**)
Antiferromagnetic resonance in MnF_2, Fred M. Johnson and Arthur H. Nethercot, Jr.—705
Cross relaxation in spin systems, N. Bloembergen, S. Shapiro, P. S. Pershan, and J. O. Artman—445
Cyclotron absorption in metallic Bi and its alloys, J. K. Galt, W. A. Yager, F. R. Merritt, B. B. Cetlin, and A. D. Brailsford—1396
Deuteron magnetic resonance spectrum and relaxation in KD_2PO_4, John L. Bjorkstam and Edwin A. Uehling—961
Electron spin resonance experiments on donors in Si. I. Electronic structure of donors by electron nuclear double resonance, G. Feher—1219; II. Electron spin relaxation effects, G. Feher and E. A. Gere—1245
Identification of magnetostatic modes of ferrimagnetic resonant spheres, P. Fletcher, I. H. Solt, Jr., and R. Bell—739
Nuclear magnetic resonance absorption in KI and KBr, D. I. Bolef and M. Menes—1441
Nuclear spins of I^{128} and I^{130}, J. E. Sherwood and S. J. Ovenshine—858
Pressure dependence of paramagnetic resonance spectra of two dilute Cr salts, Walter M. Walsh, Jr.—1485
Spectral diffusion, phonons, and paramagnetic spin-lattice relaxation, P. W. Anderson—1002
Stark effect for cyclotron resonance in degenerate bands, J. C. Hensel and Martin Peter—411
Stress and temperature dependence of paramagnetic resonance spectrum of nickel fluosilicate, W. M. Walsh, Jr.—1473
Zeeman investigation of Cm^{242}, J. C. Hubbs, R. Marrus, and J. O. Winocur—586
Magnetohydrodynamics (see **Fluid Dynamics**)
Magneto-Optical Effects (see **Optical Properties**)
Magnetoresistance (see **Electrical Conductivity and Resistance; Semiconductors**)
Magnetostriction (see **Magnetic Properties**)
Mass Defects (see **Atomic Mass and Abundance**)
Mass Spectroscopy (see **Atomic Mass and Abundance; Methods and Instruments**)
Mathematical Methods
Measurements (see **Methods and Instruments**)
Mechanics
Mechanics, Quantum—Atomic Structure and Spectra (see **Atomic Structure and Spectra**)
Mechanics, Quantum—General (see **Quantum Mechanics**)
Mechanics, Quantum—Molecular Structure and Spectra (see **Molecular Structure and Spectra**)
Mechanics, Quantum—Nuclear (see **Nuclear Structure Theory**)
Mechanics, Quantum—of Solid Bodies (see **Crystalline State**)
Mechanics, Statistical (see **Statistical Mechanics and Thermodynamics**)
Meson Field Theory (see **Field Theory**)
Mesons and Hyperons (see also **Cosmic Radiation; Elementary Particle Interaction; Nuclear Reactions Induced by Mesons and Hyperons; Scattering of Mesons and Hyperons**)
Analysis of Λ-hypernuclear three-body systems, B. W. Downs and R. H. Dalitz—593
Angular distributions of photopions from H, Edward A. Knapp, Robert W. Kenney, and Victor Perez-Mendez—605
Asymmetry in decay of Σ hyperons, R. L. Cool, Bruce Cork, James W. Cronin, and William A. Wenzel—912
Charge radius of pion, Riazuddin—1184
Coulomb effects in boson emission, Michael J. Moravcsik—621
Decay of cascade particles, W. B. Teutsch, S. Okubo, and E. C. G. Sudarshan—1148
Decay of hyperons and mesons from universal Fermi interaction, Akihiko Fujii and Masaaki Kawaguchi—1652(E)
Hyperfine splitting effects in capture of polarized μ^- mesons, H. Überall—1640
Hyperon-nucleon scattering and reaction cross sections, Fabio Ferrari and Luciano Fonda—874
Inner bremsstrahlung in hyperon decays, S. Barshay and R. E. Behrends—931
$K_{\mu 2}$ decay and leptonic decay of hyperons, B. Sakita—1650
Lifetimes and decay spectra of τ'^+ and $K_{\mu 3}{}^+$, S. Taylor, G. Harris, J. Orear, J. Lee, and P. Baumel—389
Mass-550 particle, M. Conversi, G. M. de Munari, A. Egidi, E. Fiorini, S. Ratti, C. Rubbia, C. Succi, and G. Torelli—1150
Mass of charged Σ hyperons, M. S. Swami—333
Parity of K meson and Λ β-decay branching ratio, C. H. Albright—1648
Photoproduction of K mesons and K-hyperon parities, Richard H. Capps—920
Positive pion production in p-p collisions at 450 Mev, Lee G. Pondrom—1623
Positron spectrum from decay of μ meson, Walter F. Dudziak, Ryokichi Sagane, and James Vedder—336
Study of $\theta_1{}^0$ production and decay by observation of its neutral decay mode, John E. Osher, Burton J. Moyer, and Sherwood I. Parker—612
Tridents, μ pairs, and quantum electrodynamics at small distances, J. D. Bjorken and S. D. Drell—1368
Up-down asymmetries of Σ and Λ decays, B. d'Espagnat and J. Prentki—1366
$\Xi^- - \Xi^0$ mass differences, J. J. Sakurai—1152
Metals (see **Crystalline State**)
Metastable Atoms (see **Atomic Structure and Spectra**)

Metastable Molecules (see **Molecular Structure and Spectra**)
Meteorology (see **Geophysics**)
Methods and Instruments
Injection into thermonuclear machines using beams of neutral deuterium atoms in range from 100 kev to 1 Mev, G. Gibson, W. A. S. Lamb, and E. J. Lauer—937
Ion confinement by rotation in magnetic mirror geometry, C. L. Longmire, D. E. Nagle, and F. L. Ribe—1187
Microwaves (see also **Atomic Structure and Spectra; Magnetic Resonance; Molecular Structure and Spectra; Nuclear Moments and Spin**)
Conductivity of plasma to microwaves, P. H. Fang—1652(E)
Microwave Zeeman spectrum of atomic oxygen, H. E. Radford and V. W. Hughes—1274
Stable orbits of charged particles in oscillating electromagnetic field, Erich S. Weibel—18
Miscellaneous
Mobility of Ions and Electrons (see **Ions and Electrons, Mobility**)
Molecular Aggregates
Molecular Beams (see **Atomic and Molecular Beams**)
Molecular Structure and Spectra
Millimeter-wave rotational spectrum of NO in $^2\pi_{\frac{1}{2}}$ state, Paolo G. Favero, Anna M. Mirri, and Walter Gordy—1534
Photodetachment of O_2^-, D. S. Burch, S. J. Smith, and L. M. Branscomb—1652(E)
Moments, Nuclear (see **Nuclear Moments and Spin**)
Moments of Molecules (see **Molecular Structure and Spectra**)
Muonium (see **Atomic Structure and Spectra; Mesons and Hyperons**)

Neutrinos and Antineutrinos (see also **Nuclear Spectra; Radioactivity**)
Neutron Diffraction (see **Diffraction; Scattering of Neutrons**)
Neutrons (see **Elementary Particle Interactions**)
Noise
Nuclear Fission
Precise determination of U^{233} fission neutron spectrum, A. B. Smith, P. R. Fields, R. K. Sjoblom, and J. H. Roberts—1351
Prompt neutron emission from single fission fragments, Stanley L. Whetstone, Jr.—581
Nuclear Forces (see **Elementary Particle Interactions; Field Theory; Nuclear Structure Theory**)
Nuclear Induction (see **Magnetic Resonance; Nuclear Moments and Spin**)
Nuclear Isomers (see **Nuclear Spectra; Radioactivity**)
Nuclear Moments and Spin
Nuclear spins of I^{128} and I^{130}, J. E. Sherwood and S. J. Ovenshine—858
Zeeman investigation of Cm^{242}, J. C. Hubbs, R. Marrus, and J. O. Winocur—586
Nuclear Photoeffects
Analysis of photonuclear cross sections, A. S. Penfold and J. E. Leiss—1332
Angular distributions of photopions from H, Edward A. Knapp, Robert W. Kenney, and Victor Perez-Mendez—605
γ-ray excitation of 15.1-Mev level in C^{12}, H. L. Garwin—143
Note on photodisintegration of deuteron, W. Zernik, M. L. Rustgi, and G. Breit—1358
Nuclear photon absorption in C and O, A. S. Penfold and E. L. Garwin—1324
Photonuclear cross sections for A^{40}, A. S. Penfold and E. L. Garwin—1139
Photoproton cross sections of carbon, S. Penner and J. E. Leiss—1101
Precision measurements of $Be^9(\gamma,n)$ cross section, J. H. Gibbons, R. L. Macklin, J. B. Marion, and H. W. Schmitt—1319
Total photonuclear absorption in Al, M. V. Mihailović, G. Pregl, G. Kernel, and M. Kreger—1621
Nuclear Reactions, General (see also **Elementary Particle Interactions; Scattering**)
Determination of nuclear reaction mechanisms from energy spectra of emitted particles, Bernard L. Cohen and Allen G. Rubin—1143
Light-particle spectra from N bombardment of O, M. L. Halbert and A. Zucker—132
Nuclear energy levels and mass of N^{17}, C. S. Littlejohn—250
Theory of direct-interaction inelastic scattering, Norman K. Glendenning—1297
Threshold properties of scattering and reaction cross sections, Roger G. Newton—1611
Nuclear Reactions Induced by α Particles and He^3 (see also **Scattering of α Particles**)
Angular distributions and correlations for α scattering by C^{12}, Mg^{24}, and Ca^{40}, G. B. Shook—310
$B^{11}(He^3,p)C^{13}$ and $B^{11}(He^3,d)C^{12}$ reactions, H. D. Holmgren, E. A. Wolicki, and R. L. Johnston—1281
Excitation functions of Bi and Pb, W. J. Ramler, J. Wing, D. J. Henderson, and J. R. Huizenga—154
Excitation functions of U^{235} and U^{238} bombarded with He and deuteron ions, J. Wing, W. J. Ramler, A. L. Harkness, and J. R. Huizenga—163
Radiative α-particle capture in Ni^{58} and Xe^{136} at higher energies, J. B. Ball, A. W. Fairhall, and I. Halpern—305
Study of some levels of C^{12} using the $B^{10}(He^3,p)C^{12*}$ reactions, E. Almqvist, D. A. Bromley, A. J. Ferguson, H. E. Gove, and A. E. Litherland—1040
Total neutron yields from light elements under proton and α bombardment, J. H. Gibbons and R. L. Macklin—571
Unnatural parity states in O^{16}. I, D. A. Bromley, H. E. Gove, J. A. Kuehner, A. E. Litherland, and E. Almqvist—758
Nuclear Reactions Induced by Deuterons and Tritons (see also **Scattering of Deuterons and Tritons**)
Excitation functions of Bi and Pb, W. J. Ramler, J. Wing, D. J. Henderson, and J. R. Huizenga—154
Excitation functions of U^{235} and U^{238} bombarded with He and deuteron ions, J. Wing, W. J. Ramler, A. L. Harkness, and J. R. Huizenga—163
Experiments concerning low-energy states of O^{19} nucleus, W. Zimmermann, Jr.—837
Gross structure in (d,p) reactions near $Z=50$, R. A. Peck, Jr., and J. Lowe—847
Inelastic scattering of 21.6-Mev deuterons, J. L. Yntema and B. Zeidman—815
Lifetime of 0.119-Mev state of N^{16} nucleus, W. Zimmermann, Jr.—867
Search for isotope Ir^{196}, Donald G. Gardner and W. Wayne Meinke—822
$Si^{28}(d,\alpha)Al^{26}$ reaction, Cornelius P. Browne—807
Study of (d,α) reactions on some light nuclei, G. E. Fischer and V. K. Fischer—533
Nuclear Reactions Induced by Mesons and Hyperons (see also **Elementary Particle Interactions; Mesons and Hyperons; Scattering of Mesons and Hyperons**)
Absorption of μ^- mesons in C^{12}, H. V. Argo, F. B. Harrison, H. W. Kruse, and A. D. McGuire—626
Hyperfine splitting effects in capture of polarized μ^- mesons, H. Überall—1640
Nuclear Reactions Induced by Neutrons (see also **Elementary Particle Interactions; Scattering of Neutrons**)
Cross sections for $Li^7(n,\gamma)Li^8$ reaction, W. L. Imhof, R. G. Johnson, F. J. Vaughn, and M. Walt—1037
Distribution of angular momenta, level spacings, and neutron widths of Al^{28}, Carl T. Hibdon—179

Elastic and nonelastic neutron cross sections for Be, J. B. Marion, J. S. Levin, and L. Cranberg—1584
Excitation function of reaction $Zn^{64}(n,p)Cu^{64}$ with neutrons of energies between 2 and 3.6 Mev, J. Rapaport and J. J. van Loef—565
γ rays following thermal neutron capture in Ti, J. W. Knowles, G. Manning, G. A. Bartholomew, and P. J. Campion—1065
$Li^6(n,t)He^4$ reaction at intermediate energies, S. J. Bame, Jr., and R. L. Cubitt—1580
Neutron activation at 195 kev, W. S. Lyon and R. L. Macklin—1619
Neutron-proton capture cross section, Robert W. Stooksberry and Marshall F. Crouch—1561
Nuclear absorption cross sections for 3.6-Bev neutrons, Paul H. Barrett—1374
Search for resonance structure of neutron cross sections at 100 Mev, Stuart G. Carpenter and Richard Wilson—510
Self-indication resonance neutron experiments with Ag (2–200 ev), James E. Draper—1124
Slow-neutron cross sections of Pu^{140}, Pu^{242}, and Am^{243}, R. E. Coté, L. M. Bollinger, R. F. Barnes, and H. Diamond—505
Slow-neutron resonances in Eu^{151} and Eu^{153}, Fahri Domanic and Eugene T. Patronis, Jr.—1577
Study of neutron reactions $Li^6(n,\alpha)H^3$, $F^{19}(n,\gamma)F^{20}$, and $I^{127}(n,\gamma)I^{128}$, Fletcher Gabbard, Robert H. Davis, and T. W. Bonner—201
Two new promethium isotopes; cross sections of some Sm isotopes for 14.8-Mev neutrons, R. G. Wille and R. W. Fink—1652(E)
0–600 kev γ-ray spectra from thermal neutron capture in region $A=104$ to 198, James E. Draper—268

Nuclear Reactions Induced by Protons (see also **Elementary Particle Interactions; Scattering of Protons**)
$C^{13}(p,\gamma)N^{14}$ 1.47- and 2.11-Mev resonances and odd-parity levels of mass 14, E. K. Warburton, H. J. Rose, and E. N. Hatch—214
Cross sections for elastic scattering and reactions due to protons on N^{15}, S. Bashkin, R. R. Carlson, and R. A. Douglas—1543
Cross sections for nuclear reactions involving nuclear isomers, Bruno Linder and Ralph A. James—322
Determination of nuclear reaction mechanisms from energy spectra of emitted particles, Bernard L. Cohen and Allen G. Rubin—1143
Deuteron pickup reaction in optical model approximation, Kenneth R. Greider—786
Direct radiative capture of protons by O^{16} and Ne^{20}, Neil Tanner—1060
Effective mean free path of antinucleons in nuclear matter, Jose R. Fulco—374
Energy distributions of Li^8 fragments emitted from C, Al, Cu, Ag, Au, and U bombarded by 2.2-Bev protons, Seymour Katcoff—905
Evidence for direct interactions at low energy, H. A. Lackner, G. F. Dell, and H. J. Hausman—560
515-kev and 679-kev resonances in reaction $Na^{23}(p,\gamma)Mg^{24}$, Lennart Simons—569
γ rays from 1.83-Mev resonance in reaction $Mg^{24}(p,\gamma)Al^{25}$, A. E. Litherland, H. E. Gove, and A. J. Ferguson—1312
Lifetime of first excited state of Li^7, C. P. Swann, V. K. Rasmussen, and F. R. Metzger—862
Lifetime of 3.56-Mev state in Li^6, R. J. A. Levesque and S. M. Shafroth—1354
Polarization of neutrons from $Li^7(p,n)Be^7$ and from n-d scattering, L. Cranberg—174
Radiative capture of protons in Be^9, J. J. Singh—871
Reaction mechanisms in inelastic scattering of protons from Mg, Cr, and other elements from 3.5 to 7 Mev, Frederick D. Seward—514
Total neutron yields from light elements under proton and α bombardment, J. H. Gibbons and R. L. Macklin—571
Tritium production by 6-Bev protons, Lloyd A. Currie—878
Unnatural parity states in O^{16}. II, J. A. Kuehner, A. E. Litherland, E. Almqvist, D. A. Bromley, and H. E. Gove—775

Nuclear Scattering (see **Scattering**)

Nuclear Spectra (see also **Nuclear Reactions; Radioactivity**)
Ag^{110m} disintegration, H. W. Taylor and S. A. Scott—121
$C^{13}(p,\gamma)N^{14}$ 1.47- and 2.11-Mev resonances and odd-parity levels of mass 14, E. K. Warburton, H. J. Rose, and E. N. Hatch—214
Co^{56} and Mn^{56} decay, P. Kienle and R. E. Segel—1554
Deviation from ξ approximation in first forbidden β decay, Tsuneyuki Kotani—795
Effect of configuration mixing on magnetic multipole radiation, K. K. Gupta and R. D. Lawson—326
Energy levels of B^9 and O^{15}, B. Povh—1114
Evidence for direct interactions at low energy, H. A. Lackner, G. F. Dell, and H. J. Hausman—560
Experiments concerning low-energy states of O^{19} nucleus, W. Zimmermann, Jr.—837
515-kev and 679-kev resonances in reaction $Na^{23}(p,\gamma)Mg^{24}$, Lennart Simons—569
Formulas of allowed β decay, Masato Morita—1080
γ-γ directional correlation in Cd^{110}, H. W. Taylor and W. R. Frisken—127
γ ray following thermal neutron capture in Ti, J. W. Knowles, G. Manning, G. A. Bartholomew, and P. J. Campion—1065
γ rays from 1.83-Mev resonance in reaction $Mg^{24}(p,\gamma)Al^{25}$, A. E. Litherland, H. E. Gove, and A. J. Ferguson—1312
γ-transitions between corresponding states in mirror nuclei, G. Morpurgo—1075
$I^{130} \rightarrow Xe^{130}$ decay, W. G. Smith, P. H. Stelson, and F. K. McGowan—1345
I^{136} decay properties, Noah R. Johnson and G. D. O'Kelley—279
Illustration of dependence of sign of δ of mixed γ-ray transition on its order in cascade, S. Ofer—870
Internal conversion in Li^7, R. D. Leamer—1590
L to K electron capture ratio in Ge^{71}, D. E. Rehfuss and Bernd Crasemann—1609
Lifetime of first excited state of K^{40}, F. J. Lynch and R. E. Holland—825
Lifetime of first excited state of Li^7, C. P. Swann, V. K. Rasmussen, and F. R. Metzger—862
Lifetime of 0.119-Mev state of N^{16} nucleus, W. Zimmermann, Jr.—867
Lifetime of 3.56-Mev state in Li^6, R. J. A. Levesque and S. M. Shafroth—1354
Lifetime of 186-kev level of Th^{231}, D. Strominger—502
Lifetimes of first excited 0+ states of Ca^{40} and Zr^{90}, Robert M. Kloepper, Robert B. Day, and David A. Lind—240
Longitudinal polarization of positrons from decay of O^{14}, J. B. Gerhart, F. H. Schmidt, H. Bichsel, and J. C. Hopkins—1095
Low-intensity conversion lines from Sm^{151} and Sn^{113}, W. T. Achor, W. E. Phillips, J. I. Hopkins, and S. K. Haynes—137
Lower excited states of Ca^{42}, H. Morinaga, N. Mutsuro, and Masumi Sugawara—1146
Nb^{92} decay, Harry I. West, Lloyd G. Mann, and Glen M. Iddings—1652(E)
Nuclear energy levels and mass of N^{17}, C. S. Littlejohn—250
Nuclear photon absorption in C and O, A. S. Penfold and E. L. Garwin—1324
Nuclear spectroscopy of odd-mass (161–173) nuclides produced by proton irradiation of Er and Yb, B. Harmatz, T. H. Handley, and J. W. Mihelich—1082

Nuclear Spectra (Continued)
Nuclear structure effects in internal conversion coefficients by configuration mixing, L. S. Kisslinger—292
Precision measurement of $Be^9(\gamma,n)$ cross section, J. H. Gibbons, R. L. Macklin, J. B. Marion, and H. W. Schmitt—1319
Radiative capture of protons in Be^9, J. J. Singh—871
Ratio of Gamow-Teller and Fermi coupling constants determined from *ft* values, O. C. Kistner and B. M. Rustad—1329
Resonance scattering of γ rays by 4.46-Mev and 5.03-Mev states of B^{11}, L. Cohen, R. A. Tobin, and J. McElhinney—590
Study of *K* capture-positron ratio of transition $I^{126}(2-) \rightarrow Te^{126}(2+)$, D. S. Harmer and M. L. Perlman—1133
Unnatural parity states in O^{16}. I, D. A. Bromley, H. E. Gove, J. A. Kuehner, A. E. Litherland, and E. Almqvist—758; II, J. A. Kuehner, A. E. Litherland, E. Almqvist, D. A. Bromley, and H. E. Gove—775
0–600 kev γ-ray spectra from thermal neutron capture in region $A = 104$ to 198, James E. Draper—268
$0-$ to $0+$ β transition $Pr^{144} \rightarrow Nd^{144}$, Fred T. Porter and Paul P. Day—1286
Zn^{61} decay, James B. Cumming—1600
Nuclear Structure Theory (see also **Nuclear Reactions; Nuclear Spectra**)
Collective and interparticle interactions in even-even nuclei, B. James Raz—1116
Deuteron pickup reaction in optical model approximation, Kenneth R. Greider—786
Effect of configuration mixing on magnetic multipole radiation, K. K. Gupta and R. D. Lawson—326
Effective mean free path of antinucleons in nuclear matter, Jose R. Fulco—374
Evidence for three-body vector forces in light nuclei, Arnold M. Feingold—540
Finite-range δ-function potential, M. Bolsterli—1605
γ-transitions between corresponding states in mirror nuclei, G. Morpurgo—1075
Nuclear parameters in scattering of nucleons by C, Richard Wilson—260
Nuclear structure effects in internal conversion coefficients by configuration mixing, L. S. Kisslinger—292
Theory of direct-interaction inelastic scattering, Norman K. Glendenning—1297

Optical Instruments (see **Methods and Instruments**)
Optical Properties (see also **Luminescence**)
Exciton and magneto-absorption of direct and indirect transitions in Ge, Solomon Zwerdling, Benjamin Lax, Laura M. Roth, and Kenneth J. Button—80
Infrared absorption and electron effective mass in *n*-type GaAs, W. G. Spitzer and J. M. Whelan—59
Optical properties of Ni and W and their interpretation according to Drude's formula, S. Roberts—104
Optical properties of NiO, R. Newman and R. M. Chrenko—1507
Optical properties of Te and Se, Robert S. Caldwell and H. Y. Fan—664
Theory of optical magneto-absorption effects in semiconductors, Laura M. Roth, Benjamin Lax, and Solomon Zwerdling—90

Pair Production (see **Electrons and Positrons**)
Parity (see **Elementary Particle Interactions; Field Theory; Nuclear Spectra**)
Phosphors and Phosphorescence (see **Luminescence; Semiconductors**)
Photoconductivity (see **Electrical Conductivity and Resistance**)
Photodisintegration (see **Nuclear Photoeffects**)
Photoelasticity (see **Elasticity and Plasticity**)
Photoelectric Effect (see **Electrical Properties**)
Photography and Photographic Emulsions (see **Methods and Instruments; Optical Properties**)
Photometry (see **Methods and Instruments; Optical Properties**)
Photons (see **Radiation**)
Photovoltaic Effect (see **Electrical Properties; Semiconductors**)
Piezoelectric Effect (see **Dielectrics and Dielectric Properties**)
Plasma Physics (see also **Crystalline State; Electrical Conductivity and Resistance; Electrical Discharges; Fluid Dynamics; Statistical Mechanics and Thermodynamics**)
Behavior of intense relativistic electron beams, Richard H. Capps—1203
Dependence of electron mobility on magnetic field in fully ionized gas, M. S. Sodha and Y. P. Varshni—946
Injection into thermonuclear machines using beams of neutral deuterium atoms in range from 100 kev to 1 Mev, G. Gibson, W. A. S. Lamb, and E. J. Lauer—937
Ion confinement by rotation in magnetic mirror geometry, C. L. Longmire, D. E. Nagle, and F. L. Ribe—1187
Kinetic equation for plasma unsteady correlations, C. M. Tchen—394
Langevin equation and ac conductivity of non-Maxwellian plasmas, P. Molmud—29
Self-consistent field of single-type electrons in uniform magnetic field, Lewi Tonks—637
Plasticity (see **Elasticity and Plasticity**)
Polarization, Electrical (see **Dielectrics and Dielectric Properties**)
Polymers (see **Molecular Aggregates**)
Positronium (see **Atomic Structure and Spectra; Electrons and Positrons**)
Positrons (see **Electrons and Positrons**)
Probability (see **Mathematical Methods**)
Protons (see **Elementary Particle Interactions**)

Quantum Electrodynamics (see also **Field Theory**)
Photon and electron polarization in high-energy bremsstrahlung and pair production with screening, Haakon Olsen and L. C. Maximon—887
Tridents, μ, pairs, and quantum electrodynamics at small distances, J. D. Bjorken and S. D. Drell—1368
Quantum Mechanics
Combined use of methods of superposition of configurations and correlation factor on ground states of He-like ions, Per-Olov Löwdin and Lajos Redei—752
Factor sequences in quantized general relativity, James L. Anderson—1182
Fixation of coordinates in Hamiltonian theory of gravitation, P. A. M. Dirac—924
Hartree-Fock theory with nonorthogonal basis functions, R. McWeeny—1528
Quenching of Radiation (see **Radiation**)

Radar (see **Methods and Instruments; Radiation**)
Radiation (see also **Gamma Rays; Range and Energy Loss; X-Rays**)
γ-ray excitation of 15.1-Mev level in C^{12}, H. L. Garwin—143
Photon and electron polarization in high-energy bremsstrahlung and pair production with screening, Haakon Olsen and L. C. Maximon—887
Resonance scattering of γ rays by 4.46-Mev and 5.03-Mev states of B^{11}, L. Cohen, R. A. Tobin, and J. McElhinney—590
Radio Waves (see **Radiation**)
Radioactivity (see also **Nuclear Spectra**)
Cloud-chamber measurement of half-life of neutron, N. D'Angelo—285
Lifetime of first excited state of K^{40}, F. J. Lynch and R. E. Holland—825

Lifetime of 186-kev level of Th^{231}, D. Strominger—502
Search for isotope Ir^{196}, Donald G. Gardner and W. Wayne Meinke—822
Two new promethium isotopes; cross sections of some Sm isotopes for 14.8-Mev neutrons, R. G. Wille and R. W. Fink—1652(E)

Raman Spectra (see **Molecular Structure and Spectra**)

Range and Energy Loss (see also **Scattering**)
Charge distribution and range effects produced by 3-Mev electrons in Plexiglas and Al, Bernhard Gross and Kenneth A. Wright—725
Charge transfer for protons in H_2, R. Curran, T. M. Donahue, and W. H. Kasner—490
Electron characteristic energy losses in some intermetallic compounds, Bernard Gauthé—1265

Recombination (see **Molecular Structure and Spectra**)

Rectifiers (see **Electrical Conductivity and Resistance; Semiconductors**)

Relativity and Gravitation
Elementary particles in finite world geometry, H. R. Coish—383
Factor sequences in quantized general relativity, James L. Anderson—1182
Fixation of coordinates in Hamiltonian theory of gravitation, P. A. M. Dirac—924
Geometrical significance of Einstein-Maxwell equations, Gerald Rosen—1179
Measurement of distance in general relativity, E. Newman and J. N. Goldberg—1391
Model of linear harmonic oscillator in general theory of relativity, Henry Zatzkis—1645
Q-number modification of Lorentz rotations, V. Rojansky—634

Resistance, Electrical (see **Electrical Conductivity and Resistance**)

Resonance Radiation (see **Radiation**)

Scattering, General (see also **Diffraction; Elementary Particle Interactions; Nuclear Reactions; Range and Energy Loss**)
Fixed angle dispersion relations for nucleon-nucleon scattering, M. Cini, S. Fubini, and A. Stanghellini—1633
Modified analysis of nucleon-nucleon scattering. I. Theory and p-p scattering at 310 Mev, Peter Cziffra, Malcolm H. McGregor, Michael J. Moravcsik, and Henry P. Stapp—880
Spectral representations in perturbation theory. II. Two-particle scattering, Robert Karplus, Charles M. Sommerfield, and Eyvind H. Wichmann—376
Threshold properties of scattering and reaction cross sections, Roger G. Newton—1611

Scattering of α Particles (see also **Nuclear Reactions Induced by α Particles and He^3**)
Angular distributions and correlations for α scattering by C^{12}, Mg^{24}, and Ca^{40}, G. B. Shook—310
Energy levels of B^9 and O^{16}, B. Povh—1114

Scattering of Atoms and Molecules (see **Atomic and Molecular Beams**)

Scattering of Deuterons and Tritons (see also **Nuclear Reactions Induced by Deuterons and Tritons**)
Elastic scattering of deuterons from Mg, Al, Ti, V, Cr, Co, Ni, and Cu, I. Slaus and W. Parker Alford—1054
Elastic scattering of 21.6-Mev deuterons by separated isotopes of Ni and Cu, J. L. Yntema—820
Inelastic scattering of 21.6-Mev deuterons, J. L. Yntema and B. Zeidman—815

Scattering of Electrons and Positrons (see also **Electrons and Positrons**)
Attachment of low-energy electrons in mixtures containing oxygen, G. S. Hurst and T. E. Bortner—116
Behavior of intense relativistic electron beams, Richard H. Capps—1203
Charge distribution and range effects produced by 3-Mev electrons in Plexiglas and Al, Bernhard Gross and Kenneth A. Wright—725
Determination of electron polarization by means of Mott scattering, Noah Sherman and Donald F. Nelson—1541
Measurement of Mott asymmetry in double scattering of electrons, D. F. Nelson and R. W. Pidd—728
Scattering of electrons with intrinsic electric dipole moment, B. Margolis, S. Rosendorff, and A. Sirlin—1530
Slow-electron scattering by atomic oxygen, S. C. Lin and B. Kivel—1026

Scattering of Mesons and Hyperons (see also **Mesons and Hyperons; Nuclear Reactions Induced by Mesons and Hyperons**)
Hyperon-nucleon scattering and reaction cross sections, Fabio Ferrari and Luciano Fonda—874

Scattering of Neutrons (see also **Nuclear Reactions Induced by Neutrons**)
Differential elastic scattering of neutrons from Ne, H. O. Cohn and J. L. Fowler—194
Elastic and nonelastic neutron cross sections for Be, J. B. Marion, J. S. Levin, and L. Cranberg—1584
Elastic scattering of 3.7-Mev neutrons from S, Fe, Co, Ni, Cu, and Zn, M. K. Machwe, D. W. Kent, Jr., and S. C. Snowdon—1563
Electric polarizability of neutron, G. Breit and M. L. Rustgi—830
Nuclear absorption cross sections for 3.6-Bev neutrons, Paul H. Barrett—1374
Nuclear parameters in scattering of nucleons by C, Richard Wilson—260
Polarizability of neutron, R. M. Thaler—827
Polarization of neutrons from $Li^7(p,n)Be^7$ and from n-d scattering, L. Cranberg—174
Scattering of 14-Mev neutrons by C, John B. Singletary and Donald E. Wood—1595
Total cross section for n-p scattering at 20 Mev, R. B. Day, R. L. Mills, J. E. Perry, Jr., and F. Scherb—209

Scattering of Protons (see also **Nuclear Reactions Induced by Protons**)
Charge transfer for protons in H_2, R. Curran, T. M. Donahue, and W. H. Kasner—490
Cross section for elastic scattering of protons by N^{14}, S. Bashkin, R. R. Carlson, and R. A. Douglas—1552
Cross sections for elastic scattering and reactions due to protons on N^{15}, S. Bashkin, R. R. Carlson, and R. A. Douglas—1543
Dispersion relations for p-n scattering, J. Hamilton—1170
Elastic proton-deuteron scattering at 450 Mev, A. V. Crewe, B. Ledley, E. Lillethun, S. Marcowitz, and L. G. Pondrom—1361
Elastic scattering of 40-Mev protons from isotopes of Fe, Ni, and Cu, Morton K. Brussel and John H. Williams—525
Modified analysis of nucleon-nucleon scattering. I. Theory and p-p scattering at 310 Mev, Peter Cziffra, Malcolm H. MacGregor, Michael J. Moravcsik, and Henry P. Stapp—880
Nuclear parameters in scattering of nucleons by C, Richard Wilson—260
Polarization of 6- and 7-Mev protons elastically scattered by nuclei, Robert E. Warner and W. Parker Alford—1338
Proton elastic scattering cross sections of Si, Cl, K, Sc, Ti, and Mn, Sylvan Rubin, L. Evan Bailey, and Thomas O. Passell—1110
p-p scattering from 1.4 to 2.4 Mev, David J. Knecht, S. Messelt, E. D. Berners, and L. C. Northcliffe—550

Scattering of Protons (Continued)
Reaction mechanisms in inelastic scattering of protons from Mg, Cr, and other elements from 3.5 to 7 Mev, Frederick D. Seward—514
$T(p,p)T$ scattering near $T(p,n)He^3$ threshold, Nelson Jarmie and Robert C. Allen—176
Scattering of Radiation (see **Gamma Rays; Radiation; X-Rays**)
Scintillation Counters (see **Methods and Instruments**)
Secondary Emission (see **Electrical Properties**)
Semiconductors
Acoustoelectric effect in *n*-type Ge, Gabriel Weinreich, T. M. Sanders, Jr., and Harry G. White—33
Electron bombardment of Si, D. E. Hill—1414
Electron spin resonance experiments on donors in Si. I. Electronic structure of donors by electron nuclear double resonance, G. Feher—1219; II. Electron spin relaxation effects, G. Feher and E. A. Gere—1245
Exciton and magneto-absorption of direct and indirect transitions in Ge, Solomon Zwerdling, Benjamin Lax, Laura M. Roth, and Kenneth J. Button—80
Hot electron behavior in Ge under influence of magnetic field, Louis Gold—691
Infrared absorption and electron effective mass in *n*-type GaAs, W. G. Spitzer and J. M. Whelan—59
Lattice specific heats near 0°K with application to Ge, Paul M. Marcus and Anthony J. Kennedy—459
Lifetimes and capture cross sections in Au-doped Si, W. D. Davis—1006
Microwave field dependence of drift mobility in Ge, Karlheinz Seeger—476
Optical properties of NiO, R. Newman and R. M. Chrenko—1507
Optical properties of Te and Se, Robert S. Caldwell and H. Y. Fan—664
Slow capture of holes and electrons by surface states on Ge and Si at low temperatures, S. Roy Morrison—437
Stark effect for cyclotron resonance in degenerate bands, J. C. Hensel and Martin Peter—411
Surface potential, field effect mobility, and surface conductivity of ZnO crystals, H. J. Krusemeyer—655
Theory of optical magneto-absorption effects in semiconductors, Laura M. Roth, Benjamin Lax, and Solomon Zwerdling—90
Transport properties on nondegenerate *n*-type semiconductors considering electron-electron scattering, M. S. Sodha and Y. P. Varshni—717
Shock Waves (see **Fluid Dynamics**)
Solid State (see **Crystalline State**)
Solutions (see **Liquids**)
Sound (see **Acoustics**)
Spallation (see **Nuclear Reactions**)
Spark Discharge (see **Electrical Discharges**)
Specific Heat (see **Thermal Properties**)
Spectra, Atomic (see **Atomic Structure and Spectra**)
Spectra, General
Spectra, Molecular (see **Molecular Structure and Spectra**)
Spectra, Nuclear (see **Nuclear Spectra**)
Spectroscopy Technique (see **Methods and Instruments**)
Spinor Fields (see **Field Theory**)
Standards (see **Constants, Standards, Units**)
Stark Effect (see **Atomic Structure and Spectra**)
Statistical Mechanics and Thermodynamics
Analysis of linear cooperative problem as Markoff process, W. W. Mullins—389
Ergodic foundation of quantum statistical mechanics, P. Bocchieri and A. Loinger—948
Excluded volume problem and Ising model of ferromagnetism, Michael E. Fisher and M. F. Sykes—45
Interaction of charged particles with degenerate Fermi-Dirac electron gas, R. H. Ritchie—644
Kinetic equation for plasma with unsteady correlations, C. M. Tchen—394
Polarization of electron gas in metals by substitutional impurities, B. D. Silverman and P. R. Weiss—989
Possible superfluidity of system of strongly interacting fermions, L. N. Cooper, R. L. Mills, and A. M. Sessler—1377
Single-particle energies in degenerate electron gas at high density, Ronald M. Rockmore—941
Single-particle energies in many-fermion system, David J. Thouless—1383
Stationary nonequilibrium Gibbsian ensembles, J. L. Lebowitz—1192
Thermodynamics of inhomogeneous systems. II, Edward W. Hart—27
Statistical Methods (see **Mathematical Methods**)
Strange Particles (see **Elementary Particle Interactions; Mesons and Hyperons**)
Superconductivity
Change in velocity of sound between normal and superconducting states in Sn, D. F. Gibbons and C. A. Renton—1257
Effects of dissolved gas on superconducting characteristics of Ta, W. B. Ittner, III, and J. Marchand—1268
Hall effect, resistivity, and magnetoresistivity of Th, U, Zr, Ti, and Nb, Ted G. Berlincourt—969
Impurity effects on superconductive critical temperature of In and Al, G. Chanin, E. A. Lynton, and B. Serin—719
Impurity scattering in superconductors, H. Suhl and B. T. Matthias—977
Supersonics (see **Fluid Dynamics**)

Thermal Conductivity (see **Thermal Properties**)
Thermal Diffusion (see **Diffusion**)
Thermal Expansion (see **Thermal Properties**)
Thermal Properties
Heat capacity of Al between 0.1°K and 4.0°K, Norman E. Phillips—676
Lattice specific heats near 0°K with application to Ge, Paul M. Marcus and Anthony J. Kennedy—459
Scattering of phonons by elastic strain fields and thermal resistance of dislocations, Peter Carruthers—995
Specific heats of ammonium, potassium, and sodium chloroiridates, C. A. Bailey and P. L. Smith—1010
Thermal resistance due to isotopes at high temperatures, V. Ambegaokar—488
Thermal Radiation (see **Radiation**)
Thermionic Emission (see **Electrical Properties**)
Thermodynamics (see **Statistical Mechanics and Thermodynamics**)
Thermoelectric Effect (see **Electrical Properties; Semiconductors**)
Thermoluminescence (see **Luminescence**)
Thermomagnetic Effect (see **Magnetic Properties**)
Total Cross Sections (see **Electrons and Positrons; Nuclear Reactions**)
Transmutation (see **Nuclear Reactions**)

Uncertainty Principle (see **Quantum Mechanics**)
Units (see **Constants, Standards, Units**)

Vacuum Tubes (see **Methods and Instruments**)
Van der Waals Forces (see **Molecular Structure and Spectra**)
Viscosity (see **Liquids**)

Wave Mechanics (see **Quantum Mechanics**)
Work Function (see **Electrical Properties**)

X-Rays
Precision measurement of *K* x-ray spectrum of Hg, Olof Beckman and Pär Bergvall—1280